

# Merced Station Conceptual Design and Planning



**City of Merced  
Public Information Meeting  
October 5, 2010**



# Agenda

- 1. Introduction - High Speed Train in Merced**
2. Station Area TOD Opportunities
3. Conceptual Station Area TOD Design
4. Merced Station Design Concepts
5. High Speed Train Station Examples
6. Discussion and Comments

# Statewide High Speed Train System



## Connecting from Merced to:

- San Francisco Bay Area
- Los Angeles
- Orange County
- San Diego
- Inland Empire
- San Jose
- Central Valley Area
- Sacramento



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**

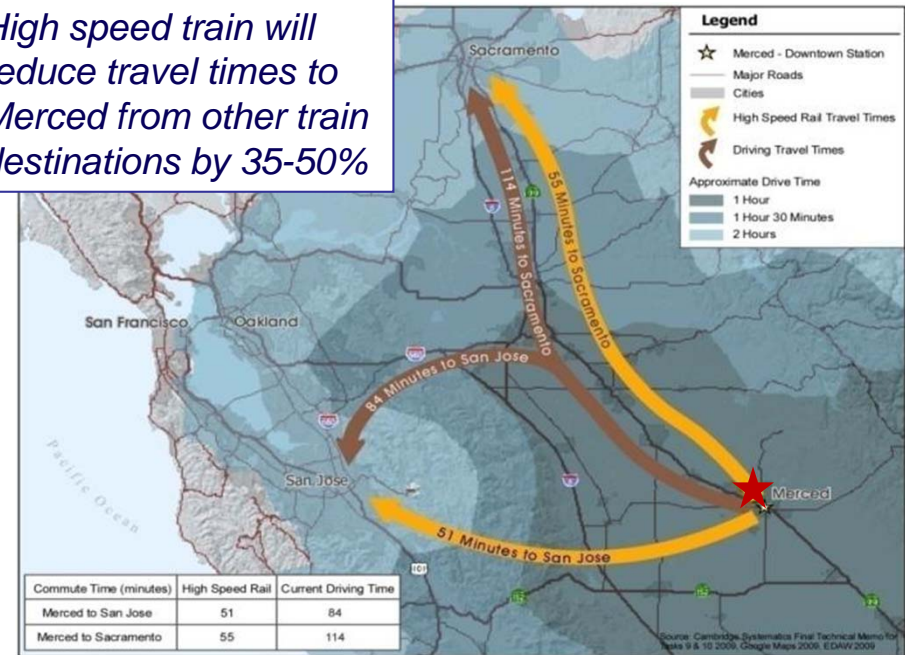


# High Speed Train in Merced

## What are High Speed Trains?

- **Intercity passenger trains** operating at speeds up to 220 miles per hour
- **Tracks separated** from roads and highways
- **Proven Technology**-Safe and Reliable
  - Successfully operating throughout Europe and Asia

*High speed train will reduce travel times to Merced from other train destinations by 35-50%*



## Travel Times from the Merced Station

	By Car	By Train
To San Francisco	146 min.	91 min.
To Sacramento	114 min.	55 min.
To San Jose	84 min.	51 min.
To Los Angeles	240 min.	139 min.



California High Speed Train Concept



Intercity Express, Germany

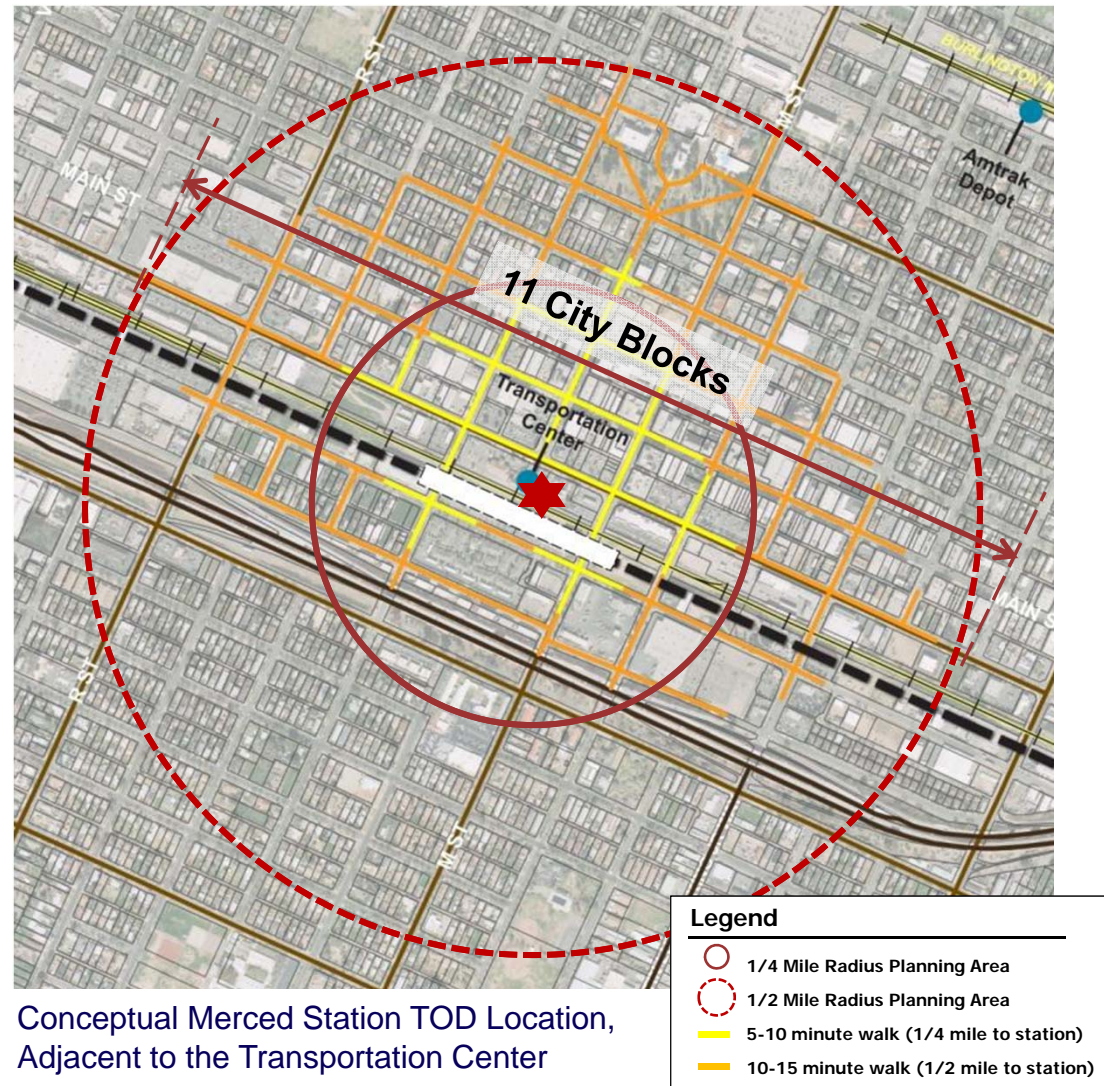




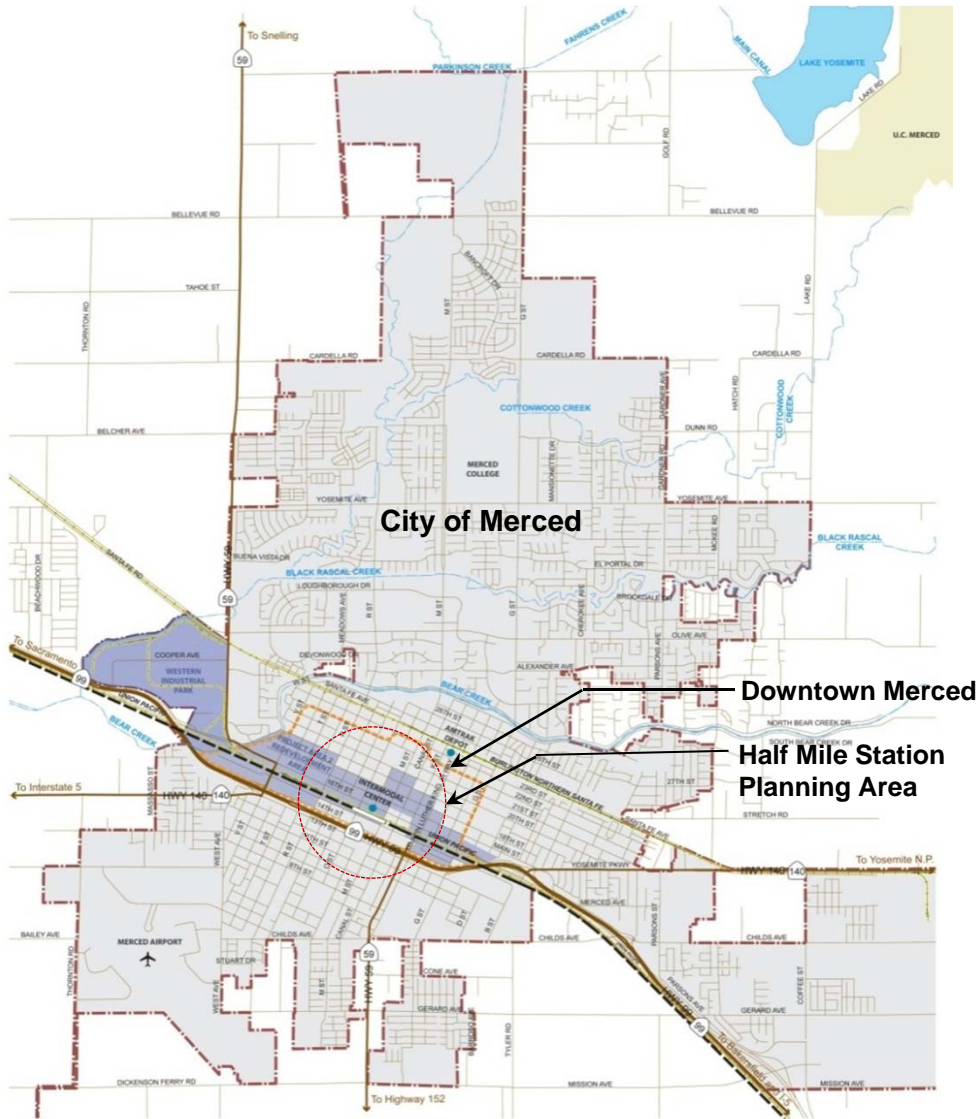
# Transit Oriented Development in Merced

## What is Transit Oriented Development (TOD)?

- **Compact, mixed-use development** centered within walking distance of public transit
  - Housing, jobs, retail, services, and entertainment are in close proximity
- Located generally within a **¼ mile to ½ mile radius** of a transit stop
- Promotes non-vehicular **travel choices** and **intermodal connections**



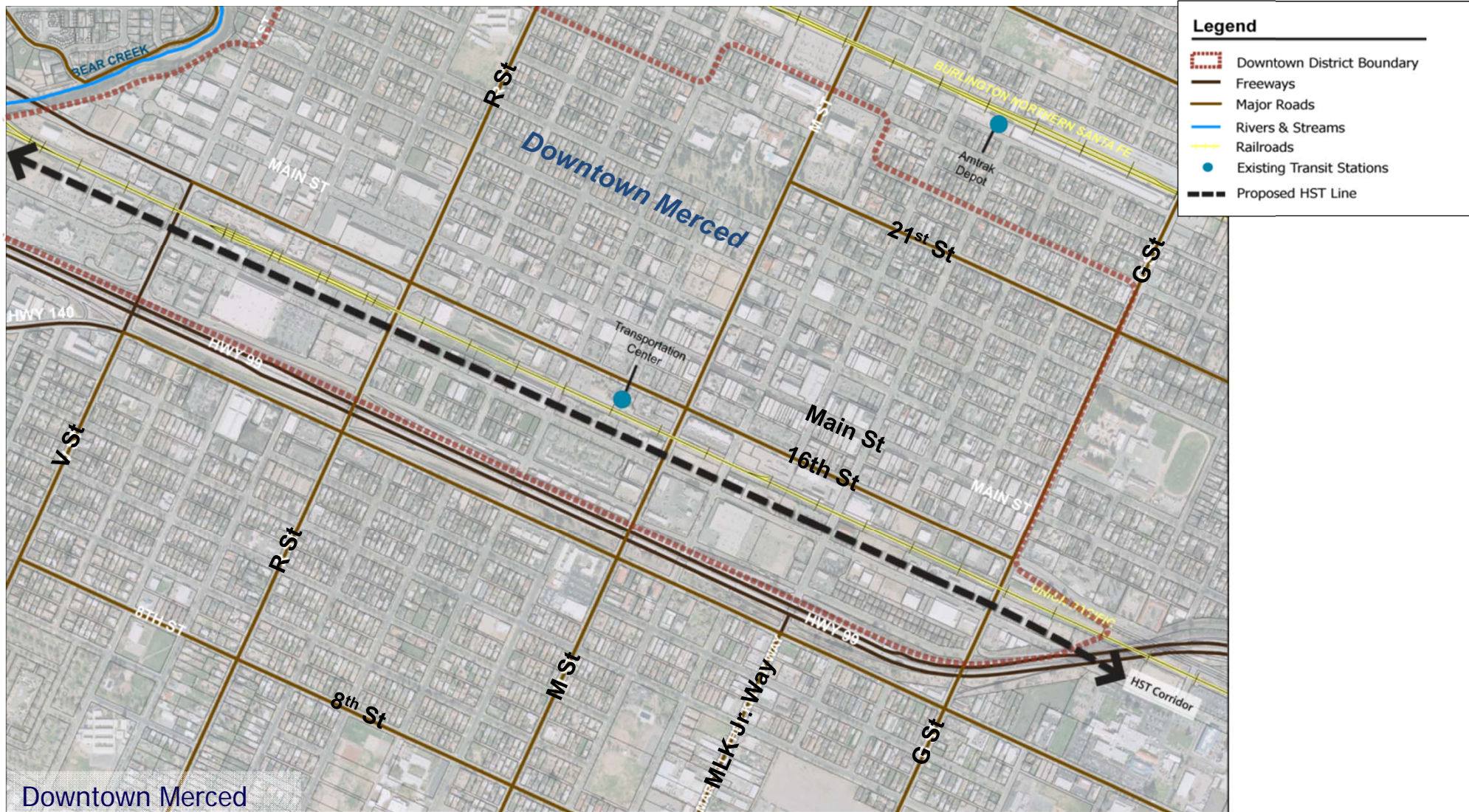
# Existing Site Context



- Proposed in Downtown Merced, next to the Downtown Transportation Center
- Train platform and tracks will be elevated on columns above existing roads and Downtown development
- Merced Station will be a terminus station in the first phase of the high speed train system

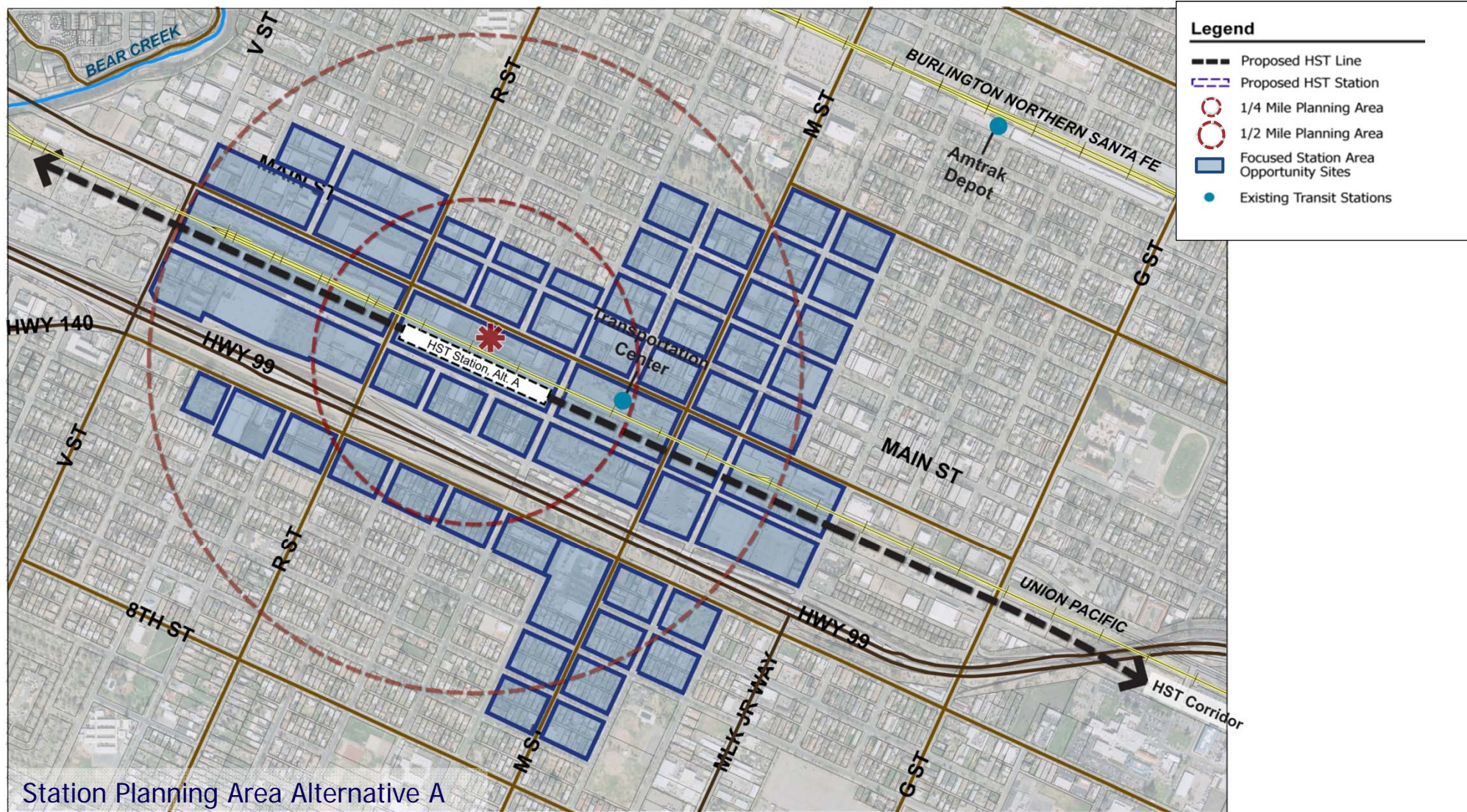


# Existing Site Context



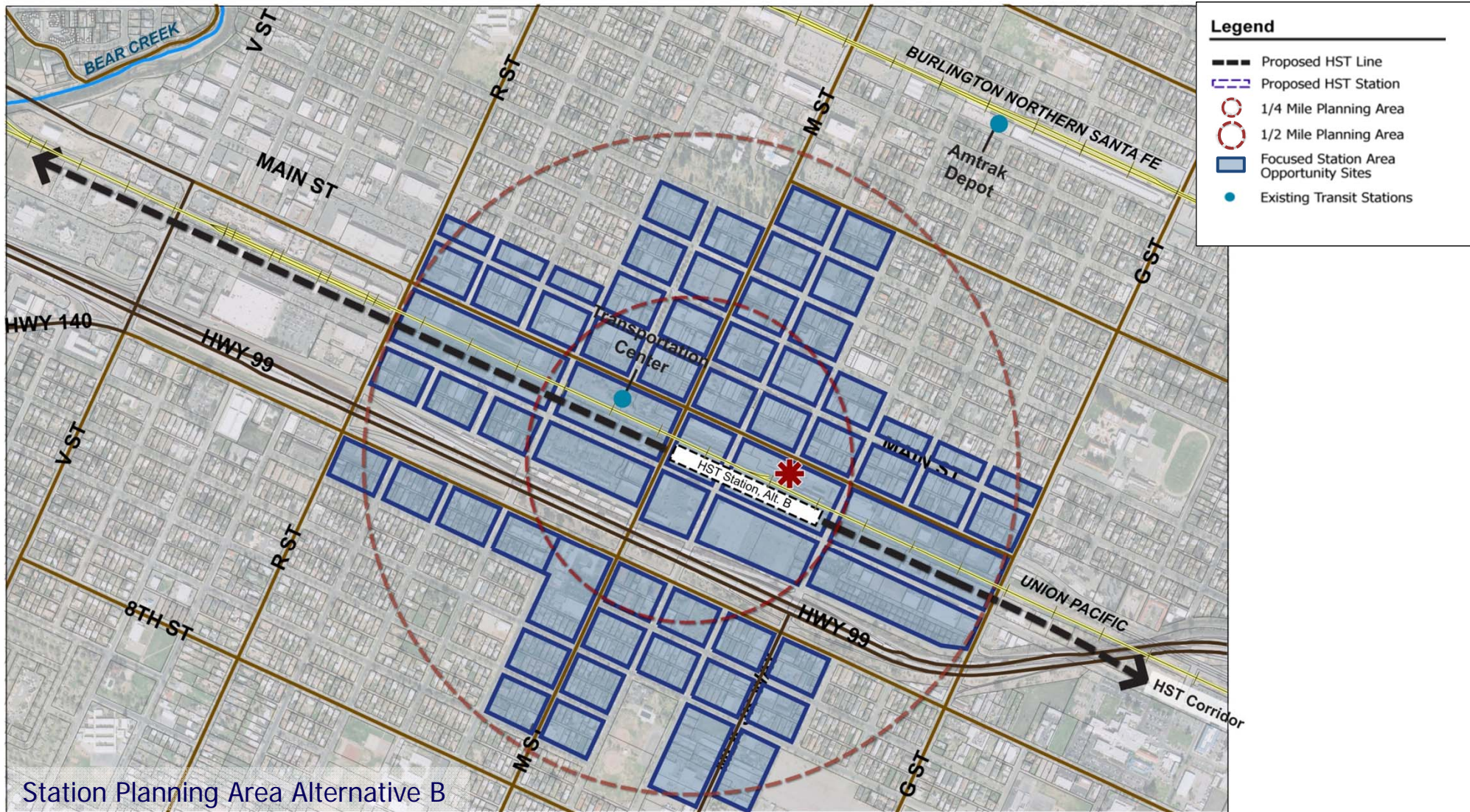


# Potential Station Planning Area



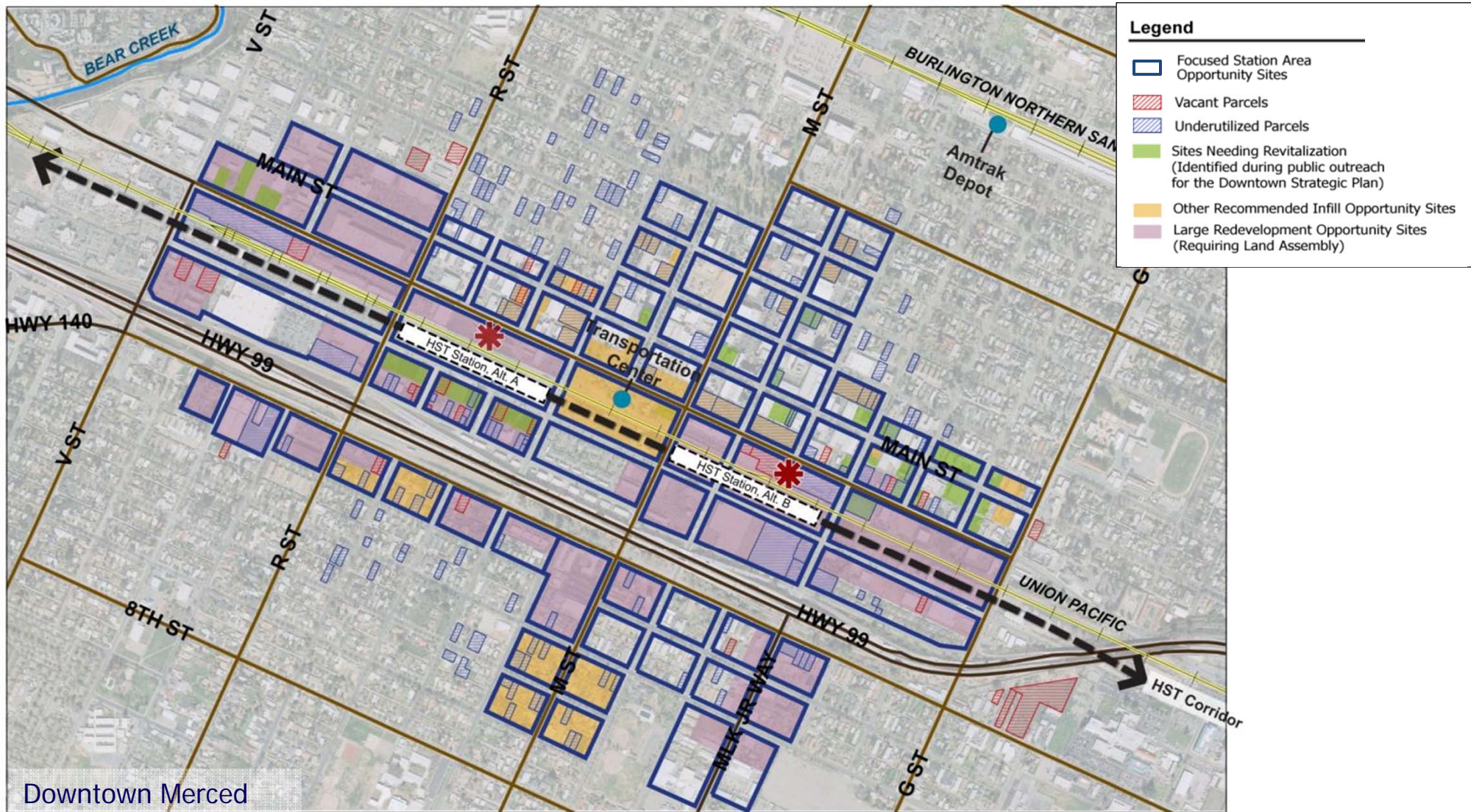


# Potential Station Planning Area



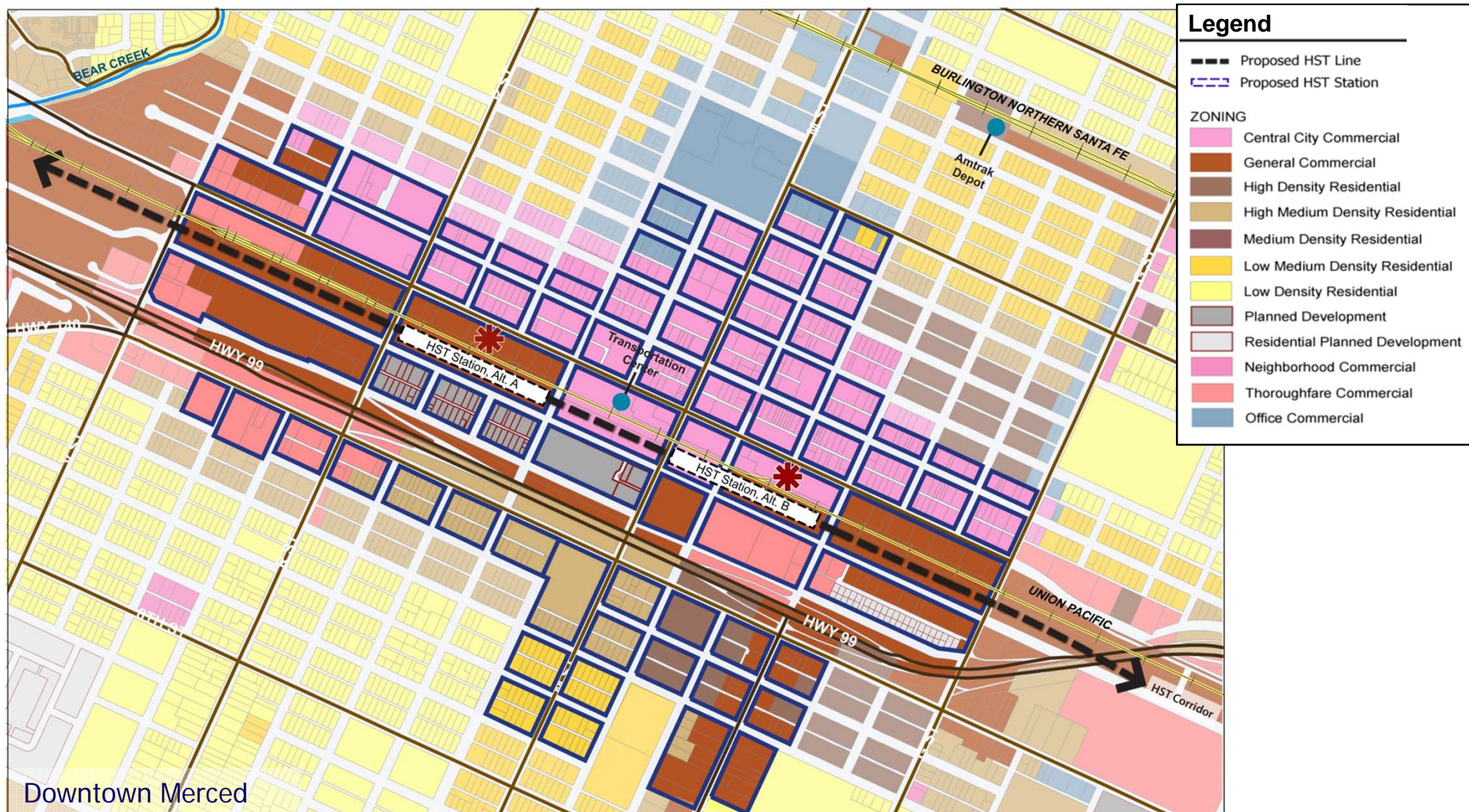


# Opportunity Site





# Existing Land Uses



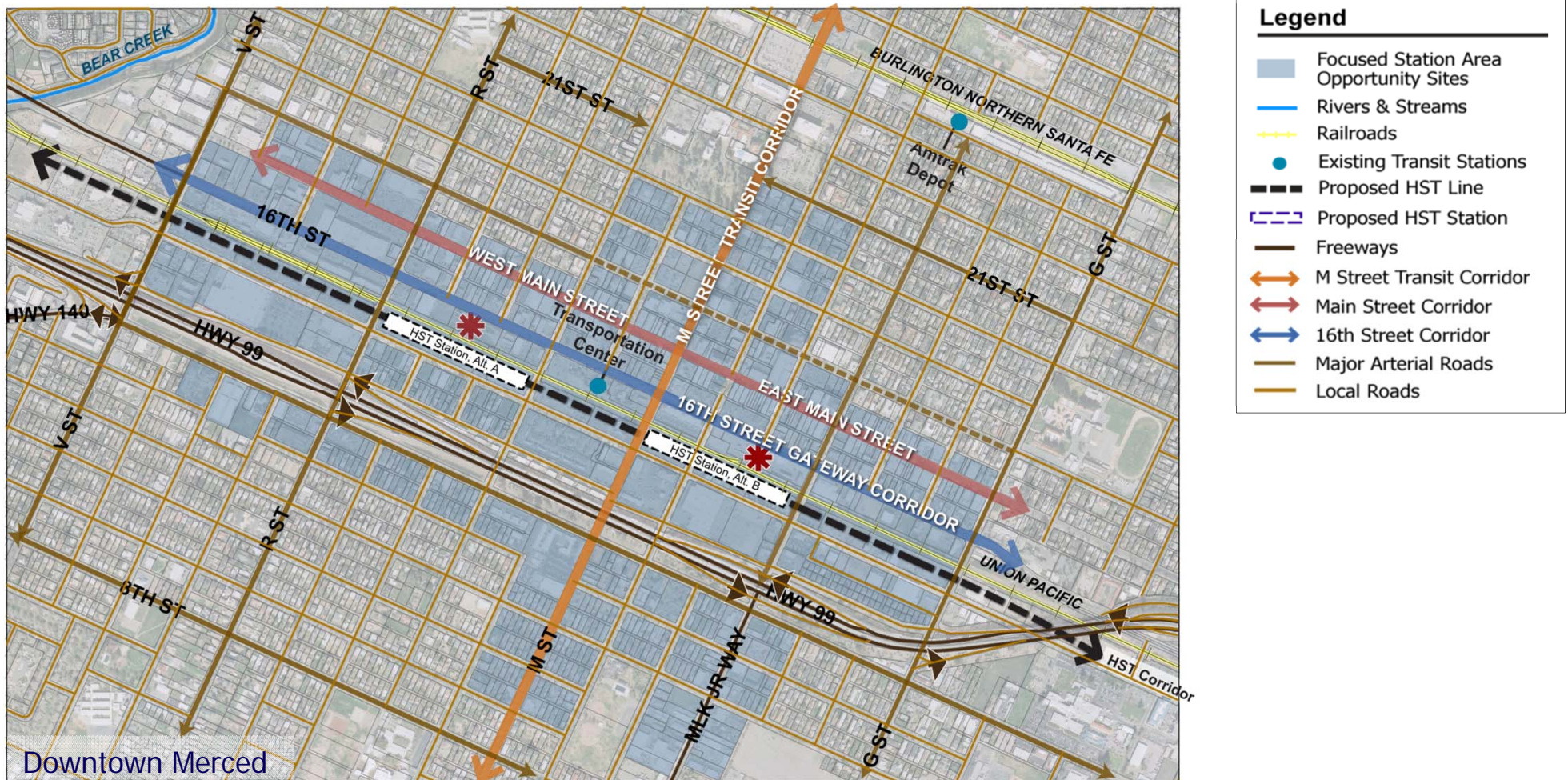
# Agenda

1. Introduction - High Speed Train in Merced
- 2. Station Area TOD Opportunities**
3. Conceptual Station Area TOD Design
4. Merced Station Design Concepts
5. High Speed Train Station Examples
6. Discussion and Comments



# Vehicular Access and Circulation

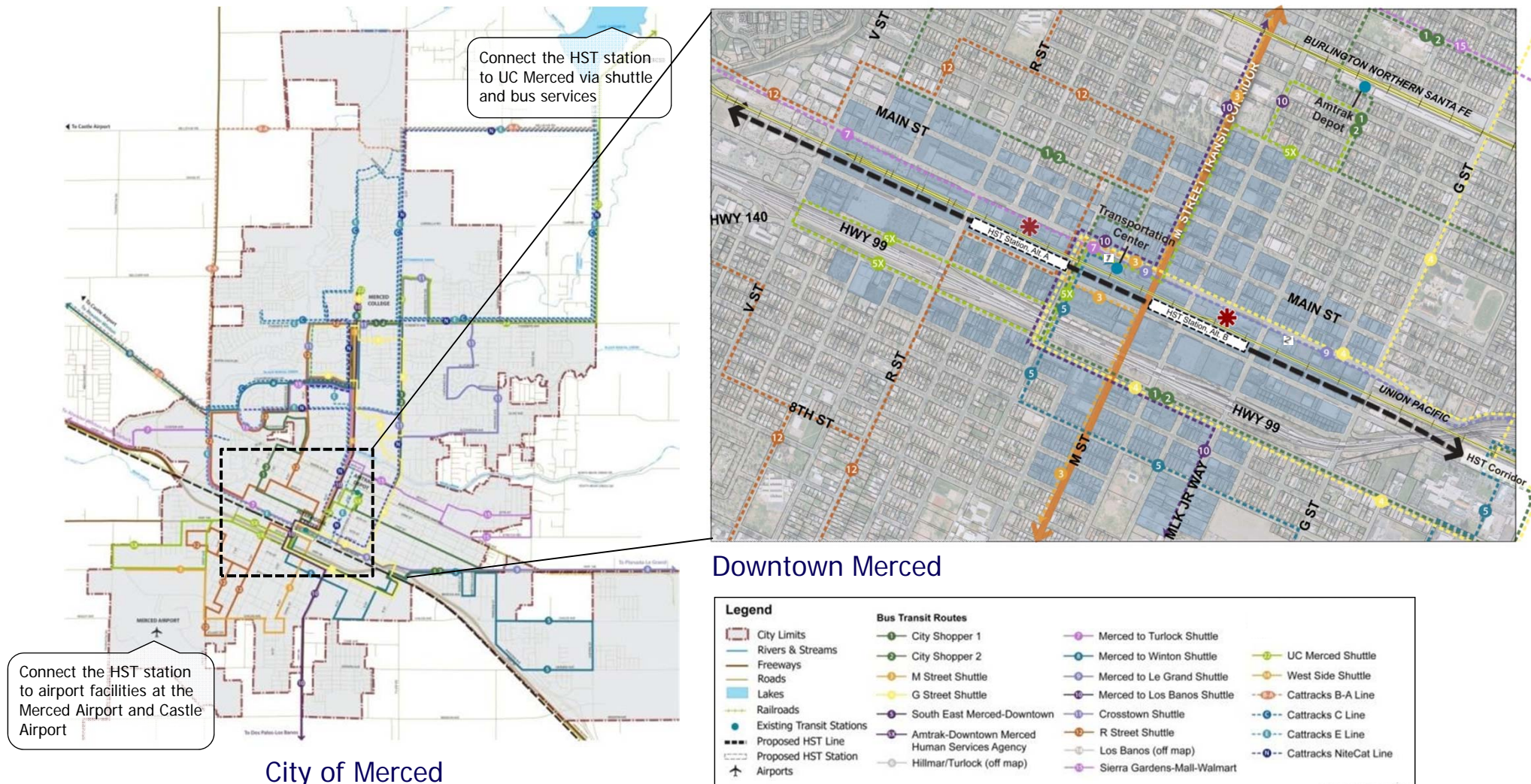
*Adapt & preserve the existing street grid and alley system in Downtown; focus station area traffic on freeways and major roadways*





# Transit Access and Circulation

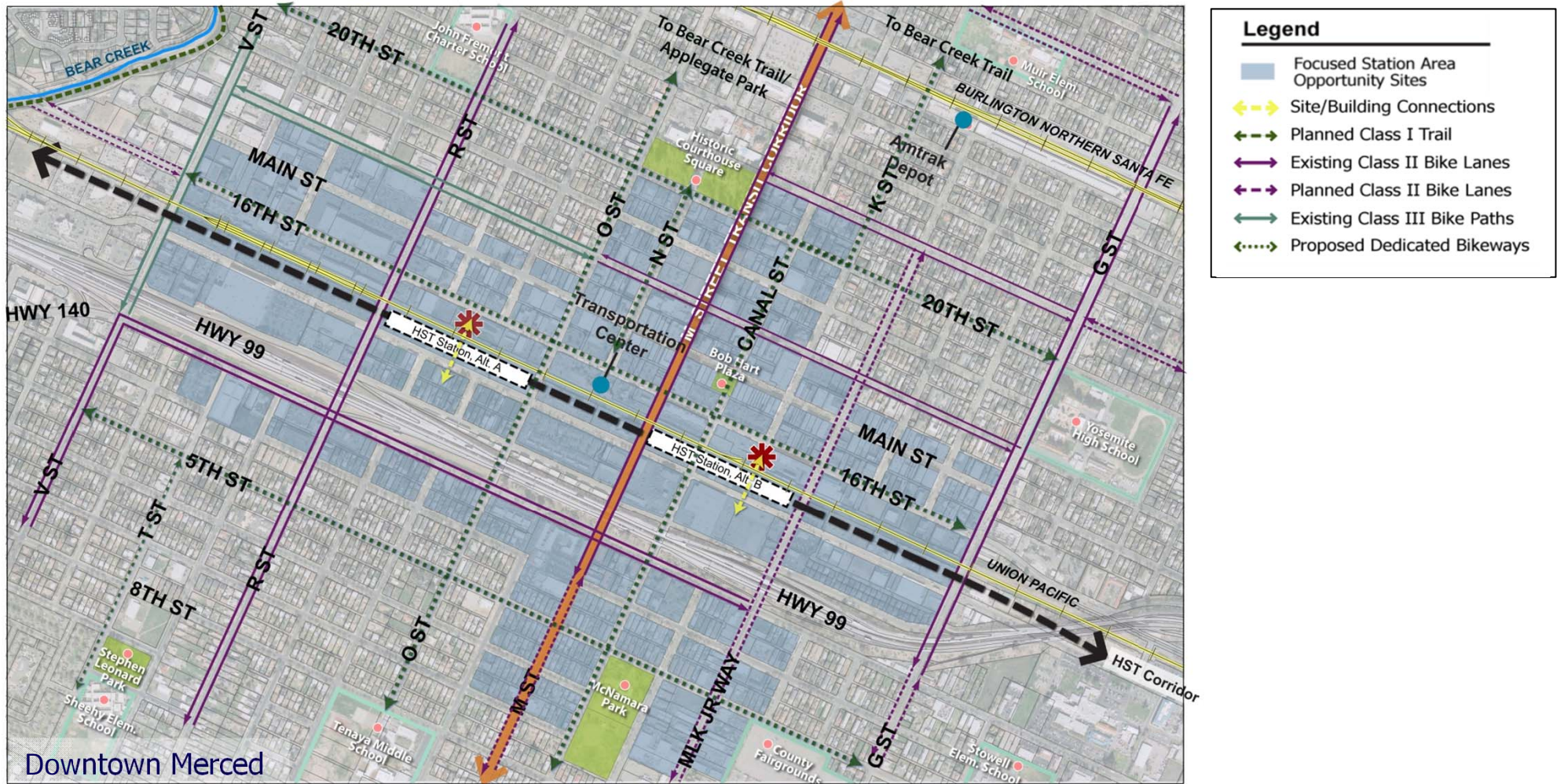
*Enhance the Transportation Center in Downtown Merced with access to high speed rail and convenient connections to and from Merced*





# Bike & Pedestrian Connections

*Refine bike and pedestrian circulation with additional local bikeways and paseo connections through Downtown Merced.*





# TOD Design Opportunities

## *Promote Transit Oriented Development in Downtown Merced*



- Maximize the value capture of high speed train service to the community with a high density, mixed use development pattern
- Link economic development opportunities in Downtown Merced to improved regional access
- Support district parking and shared parking strategies to accommodate station area growth
- Provide development and infill incentives



Establish a high density, mixed-use development pattern



Activate and connect the space beneath the train tracks



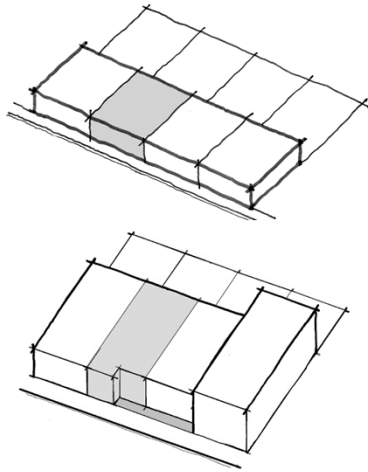


# TOD – Urban Design

## 1. Maintain the Downtown Main Street Development Pattern



Commercial Building Line with Varying Setbacks



- Build commercial buildings to the front property line or back of the sidewalk; but allow setbacks to vary from the sidewalk for displays, seating, and other public activities
- Allow residential building setbacks to vary between 0 and 15 feet from the sidewalk
- Maintain, enhance, and establish significant view corridors as a civic and community amenity



Typical Downtown Residential Setback

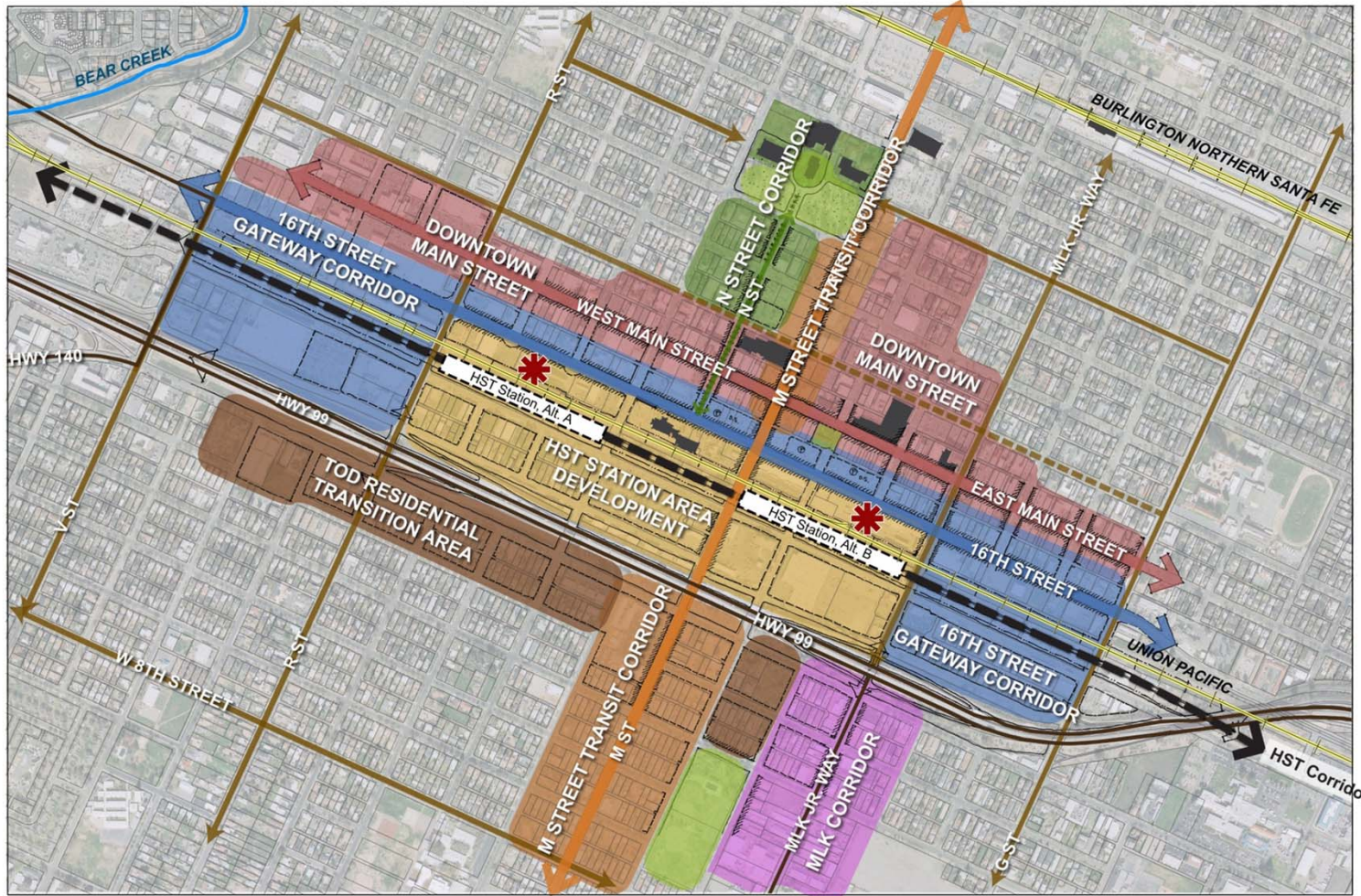


The Merced Theater tower is an example of a Downtown landmark



# TOD – Districts and Centers

## *2. Establish districts, corridors, and centers that create unique places and enhance the character of Downtown Merced*



### Station Planning Area Districts

- Transit Station Area
- 16<sup>th</sup> Street Gateway Corridor
- Downtown Main Street Corridor
- M Street Transit Corridor
- N Street Civic Corridor
- Martin Luther King Jr. Way Corridor
- TOD Residential Transition Area



# TOD – Streetscape Design

## 3. Provide public realm improvements to the station planning area that support and enhance the Downtown streetscape



Streetscape improvements on Main St.



Seating area adjacent to the Downtown theaters

- Plan for streetscape improvements associated with station area development
- Include plazas, seating areas, and pedestrian amenities connecting Downtown businesses and destinations
- Provide plenty of trees, parks, open space, and trail connections that provide an urban refuge in the downtown
- Phase parking intensity as needed by station development and expand the Downtown parking district to include the station planning area



# TOD – Sustainable Design

## *4. Promote sustainable design focused on integrating a whole system approach:*

- Using LID techniques such as green streets, parking swales, and permeable paving
- Promoting green building practices and landscaping that optimize building energy performance and operation and reduce potable water demand
- Promoting the use of public realm energy systems such as parking area PV roofs or solar operated parking meters and light fixtures





# Agenda

1. Introduction - High Speed Train in Merced
2. Station Area TOD Opportunities
- 3. Conceptual Station Area TOD Design**
4. Merced Station Design Concepts
5. High Speed Train Station Examples
6. Discussion and Comments



# Market Demand Analysis Projections

## Station Planning Area Land Use Projections:

- Residential demand for 2,000 multifamily units in the station planning area
- Retail demand for approximately 180,000 sf of retail space providing a variety of retail, entertainment, and service-oriented uses
- Office market demand of approximately 440,000 sf of space
  - 65% of that total occupied by private companies
  - 35% of that total serving public sector office demand
- Demand for a full service hotel with 80-100 rooms and conference facilities



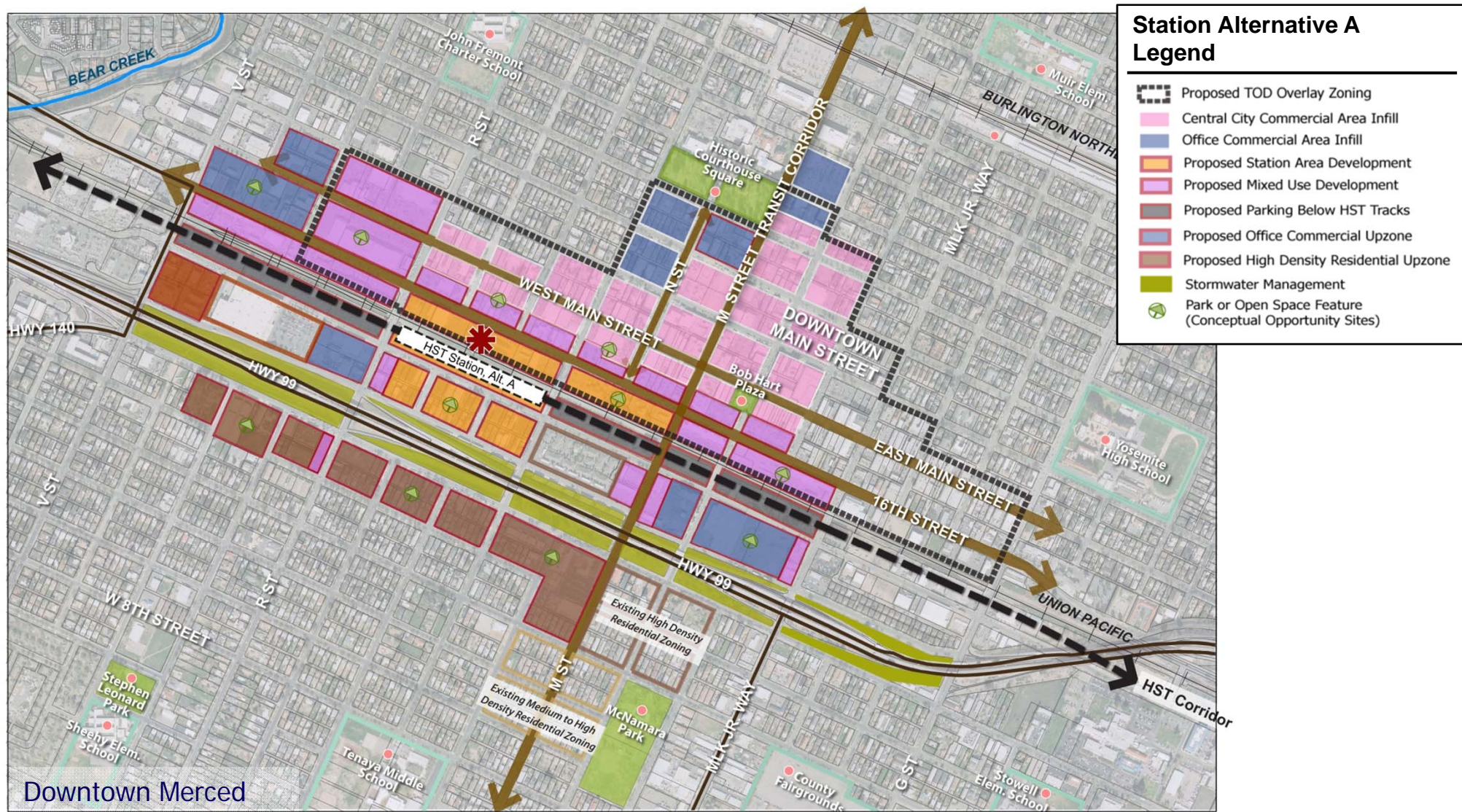
Example of townhomes fronting the street



Retail services with wide sidewalks and pedestrian amenities

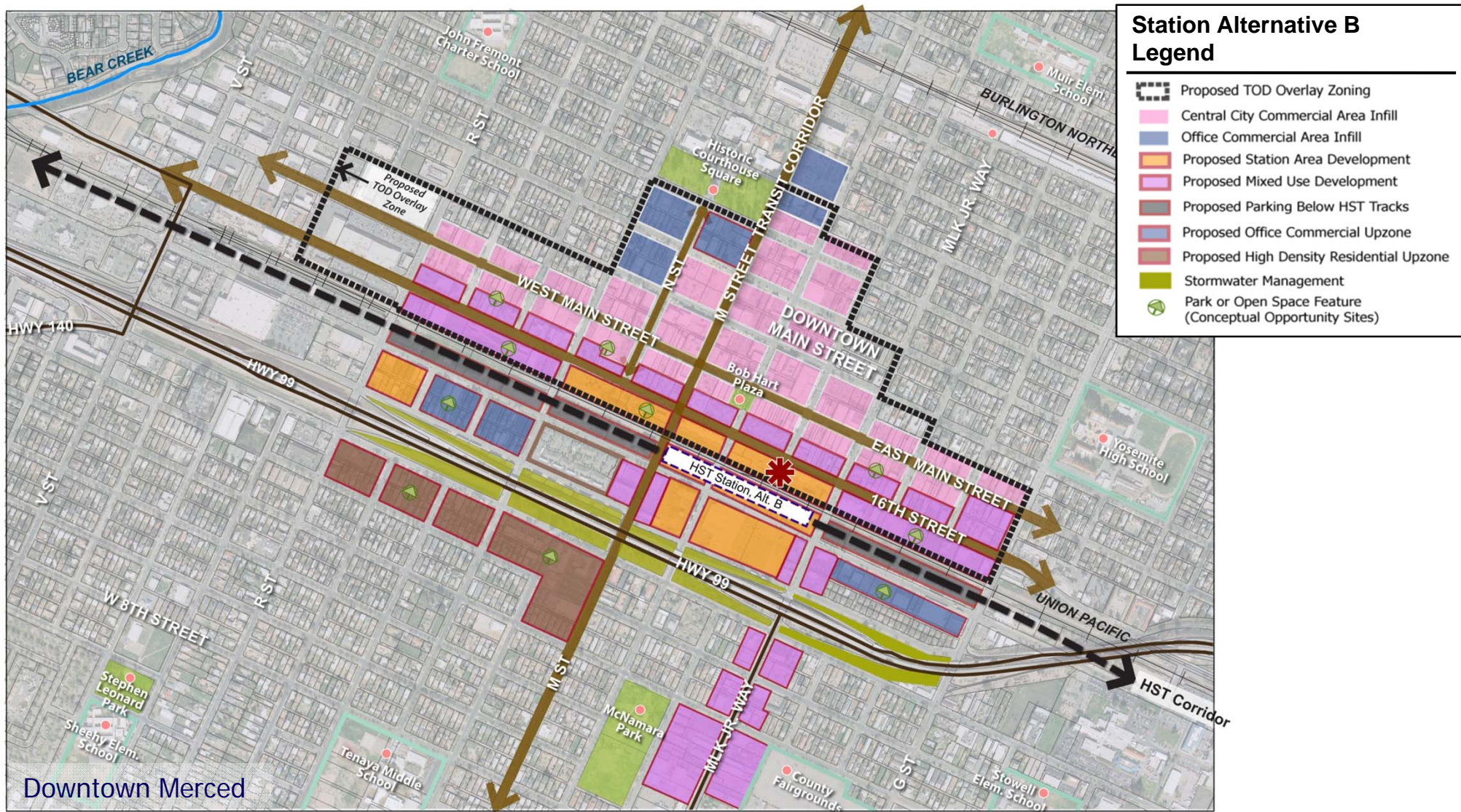


# Potential Land Uses





# Potential Land Uses



Downtown Merced





# Station Planning Area Conceptual Design



*View toward Merced Station Entrance*

Merced Station | Slide 25



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



# Station Planning Area Conceptual Design



*View Southwest to Merced Station from Downtown Site*

Merced Station | Slide 26



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



# Station Planning Area Conceptual Design



*View of Merced Station along 16<sup>th</sup> Street*

Merced Station | Slide 27



Mixed Use-Employment, Retail,  
Entertainment & Residential Center



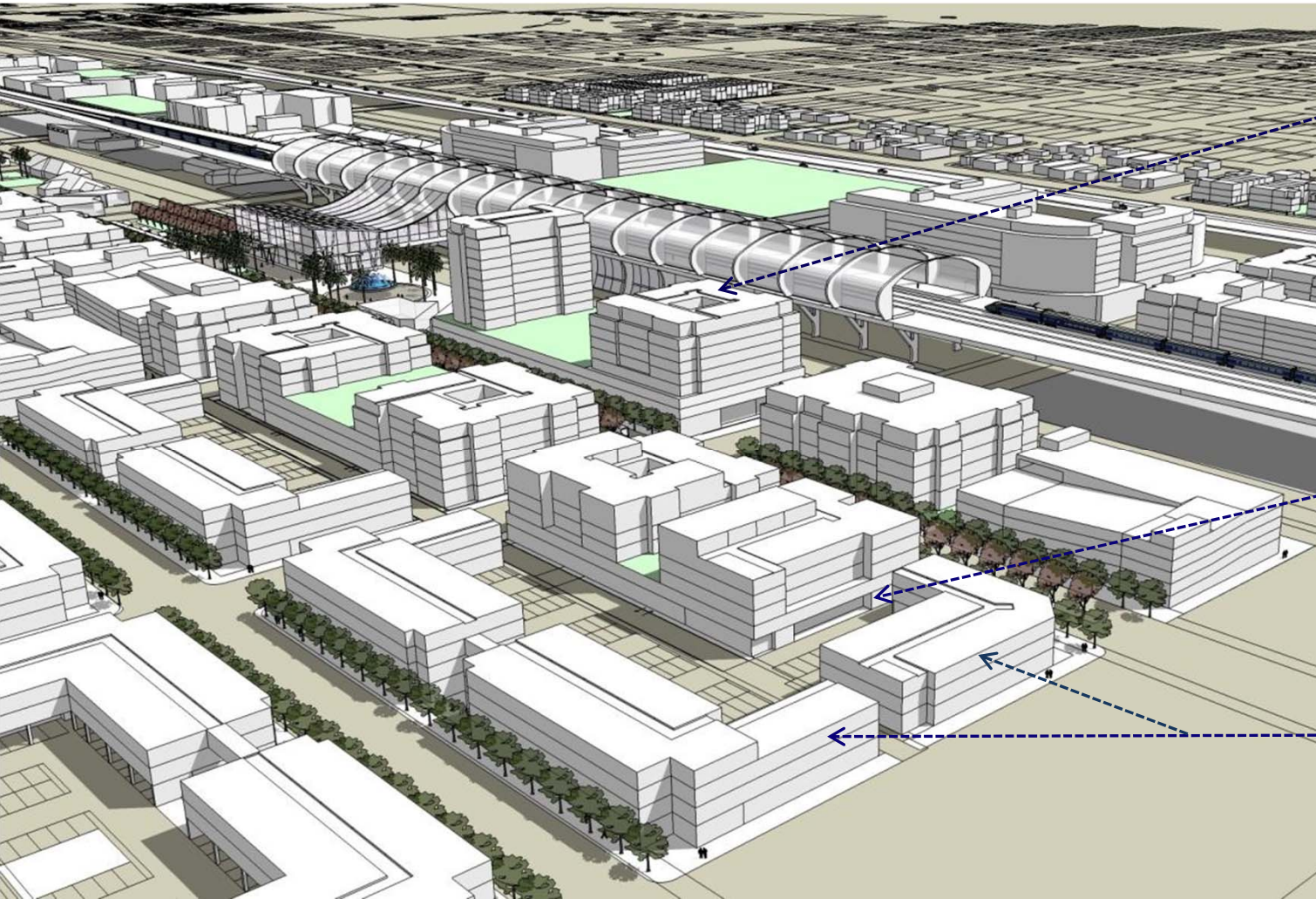
Streetscape Improvements along 16<sup>th</sup> St.



Station Area Central Plaza



# Station Planning Area Conceptual Design



*View Looking Southeast to Merced Station*

Merced Station | Slide 28



Hotel and Conference Center



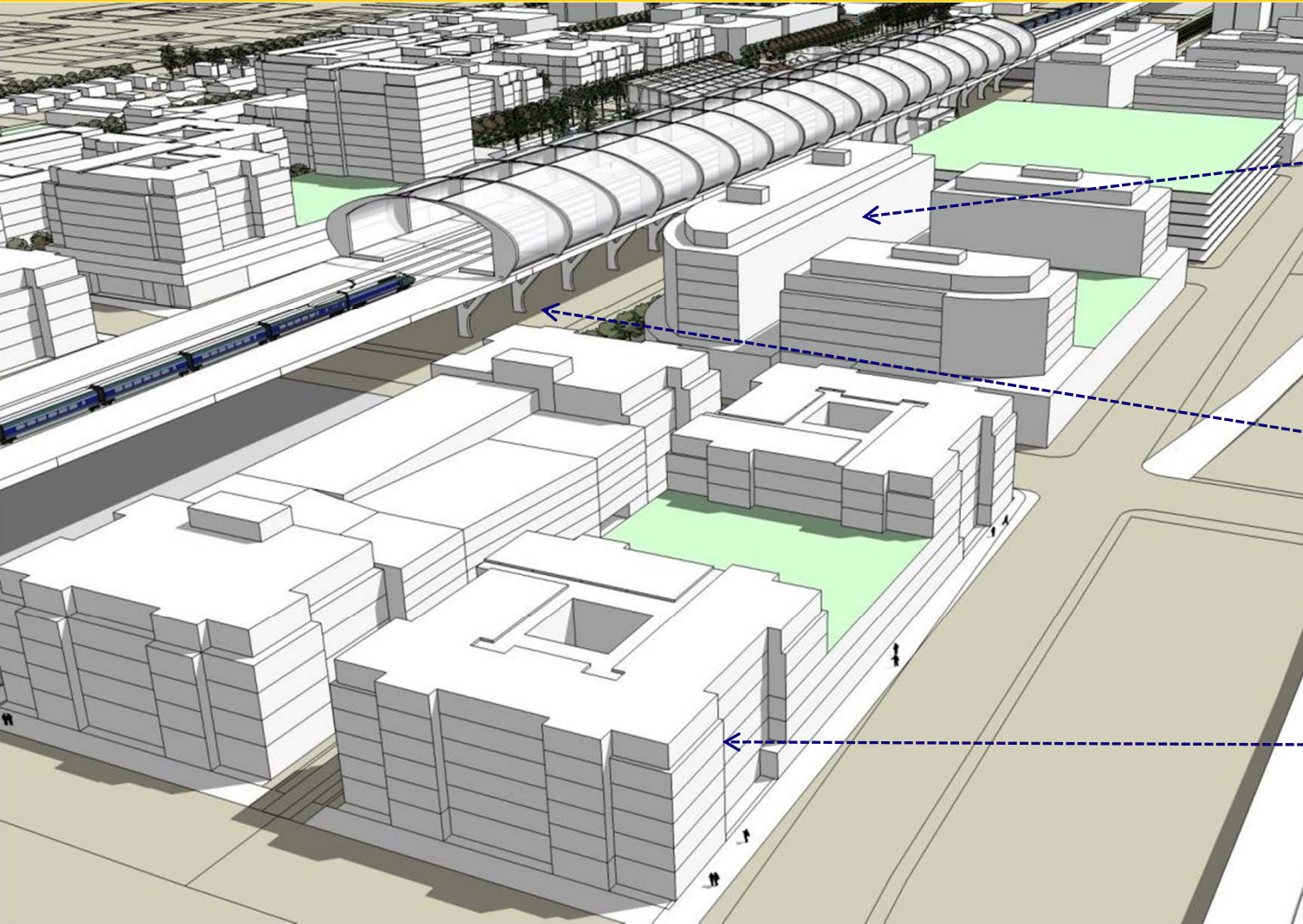
Podium Condos (75-110 units/acre)



Lofts or Apartments (20-40 units/acre)



# Station Planning Area Conceptual Design



*View along the 16<sup>th</sup> Street Gateway Corridor*

Merced Station | Slide 29



Station Area Mixed-Use Development



Activate and connect the spaces beneath & between the train tracks



Podium Office Development



# Station Planning Area Conceptual Design



Detached Townhomes on a Paseo



Attached Townhomes

*Proposed Residential Infill South of Highway 99*

Merced Station | Slide 30



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



# Agenda

1. Introduction - High Speed Train in Merced
2. Station Area TOD Opportunities
3. Conceptual Station Area TOD Design
- 4. Merced Station Design Concepts**
5. High Speed Train Station Examples
6. Discussion and Comments



# Merced Station Design Concepts

## Roles of a High Speed Rail Station

	<b><i>Transportation:</i></b>	<b><i>Land Use:</i></b>
<b><i>Station as part of the <b>High Speed Train</b> system:</i></b>	<b>Role 1:</b> Facilitate access to HST and transfers with alternate modes	<b>Role 2:</b> Provide goods and services tailored to passengers
<b><i>Station as part of the <b>Community</b>:</i></b>	<b>Role 3:</b> Encourage local use of HST and public transit	<b>Role 4:</b> Stimulate and support sustainable urban development



# Merced Station Design Concepts

## Roles of a High Speed Rail Station

	<b><i>Transportation:</i></b>	<b><i>Land Use:</i></b>
<b><i>Station as part of the <b>High Speed Train</b> system:</i></b>	<b>Role 1:</b> Facilitate access to HST and transfers with alternate modes	<b>Role 2:</b> Provide goods and services tailored to passengers
<b><i>Station as part of the <b>Community</b>:</i></b>	<b>Role 3:</b> Encourage local use of HST and public transit	<b>Role 4:</b> Stimulate and support sustainable urban development



# Merced Station Design Concepts

## Roles of a High Speed Rail Station

	<i>Transportation:</i>	<i>Land Use:</i>
<b><i>Station as part of the <b>High Speed Train</b> system:</i></b>	<b>Role 1:</b> Facilitate access to HST and transfers with alternate modes	<b>Role 2:</b> Provide goods and services tailored to passengers
<b><i>Station as part of the <b>Community</b>:</i></b>	<b>Role 3:</b> Encourage local use of HST and public transit	<b>Role 4:</b> Stimulate and support sustainable urban development



# Merced Station Design Concepts

## Roles of a High Speed Rail Station

	<b><i>Transportation:</i></b>	<b><i>Land Use:</i></b>
<b><i>Station as part of the <b>High Speed Train</b> system:</i></b>	<b>Role 1:</b> Facilitate access to HST and transfers with alternate modes	<b>Role 2:</b> Provide goods and services tailored to passengers
<b><i>Station as part of the <b>Community</b>:</i></b>	<b>Role 3:</b> Encourage local use of HST and public transit	<b>Role 4:</b> Stimulate and support sustainable urban development

# Merced Station Design Concepts

## Roles of a High Speed Rail Station

	<i>Transportation:</i>	<i>Land Use:</i>
<i>Station as part of the <b>High Speed Train</b> system:</i>	<b>Role 1:</b> Facilitate access to HST and transfers with alternate modes	<b>Role 3:</b> Provide goods and services tailored to passengers
<i>Station as part of the <b>Community</b>:</i>	<b>Role 2:</b> Encourage local use of HST and public transit	<b>Role 4:</b> Stimulate and support sustainable urban development



# Merced Station Design Concepts

## Center Platform Configuration



- Local trains arrive
- Express trains pass through
- Local trains depart

# Merced Station Design Concepts

## Side Platform Configuration

← Northbound



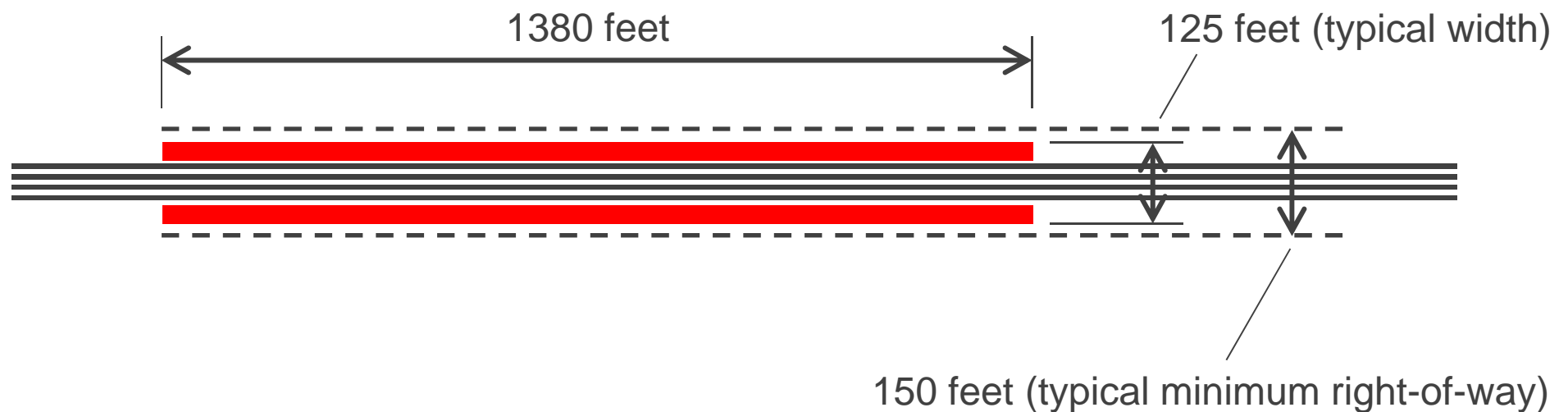
Southbound →

- Local trains arrive
- Express trains pass through
- Local trains depart



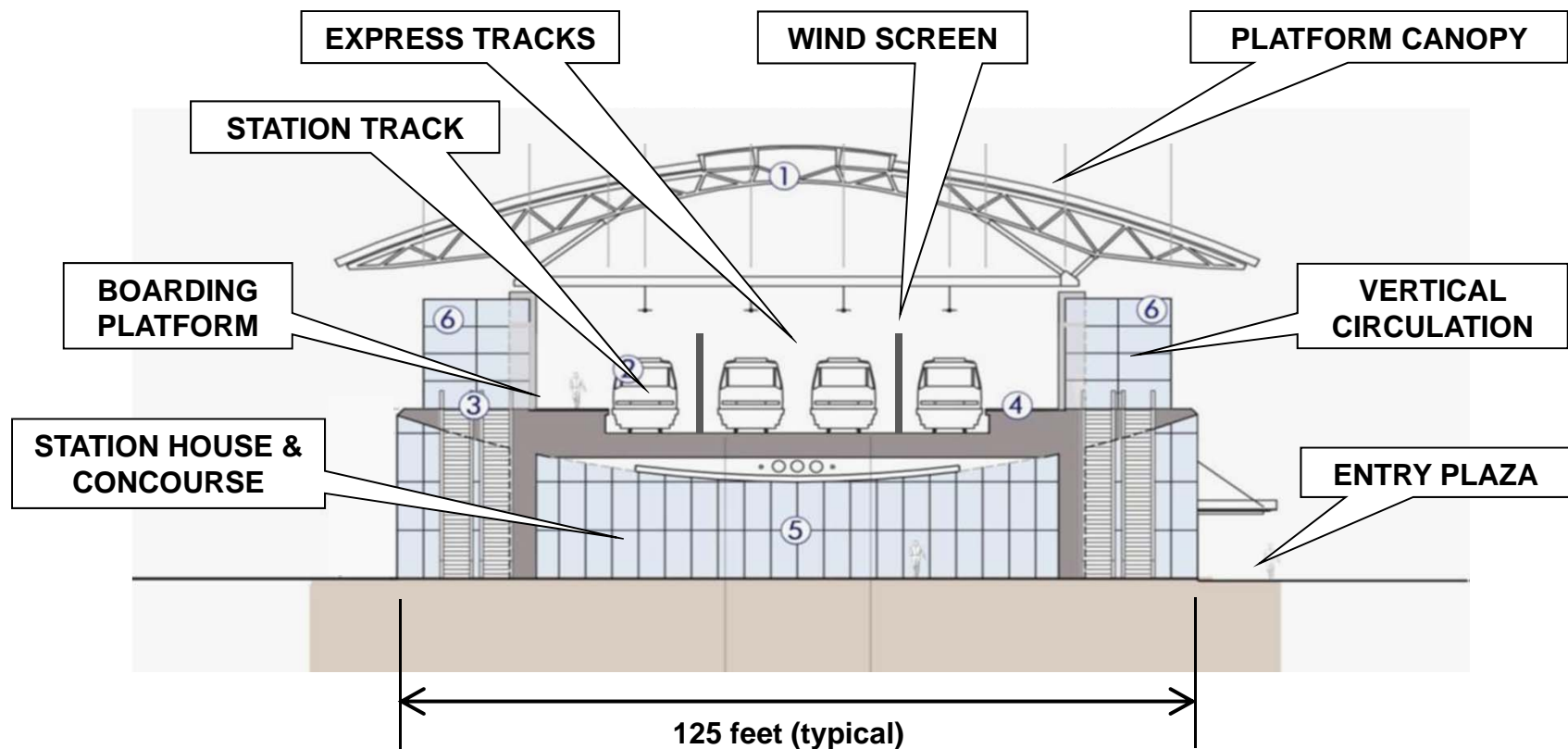
# Merced Station Design Concepts

## Typical HST Station “Footprint”



# Merced Station Design Concepts

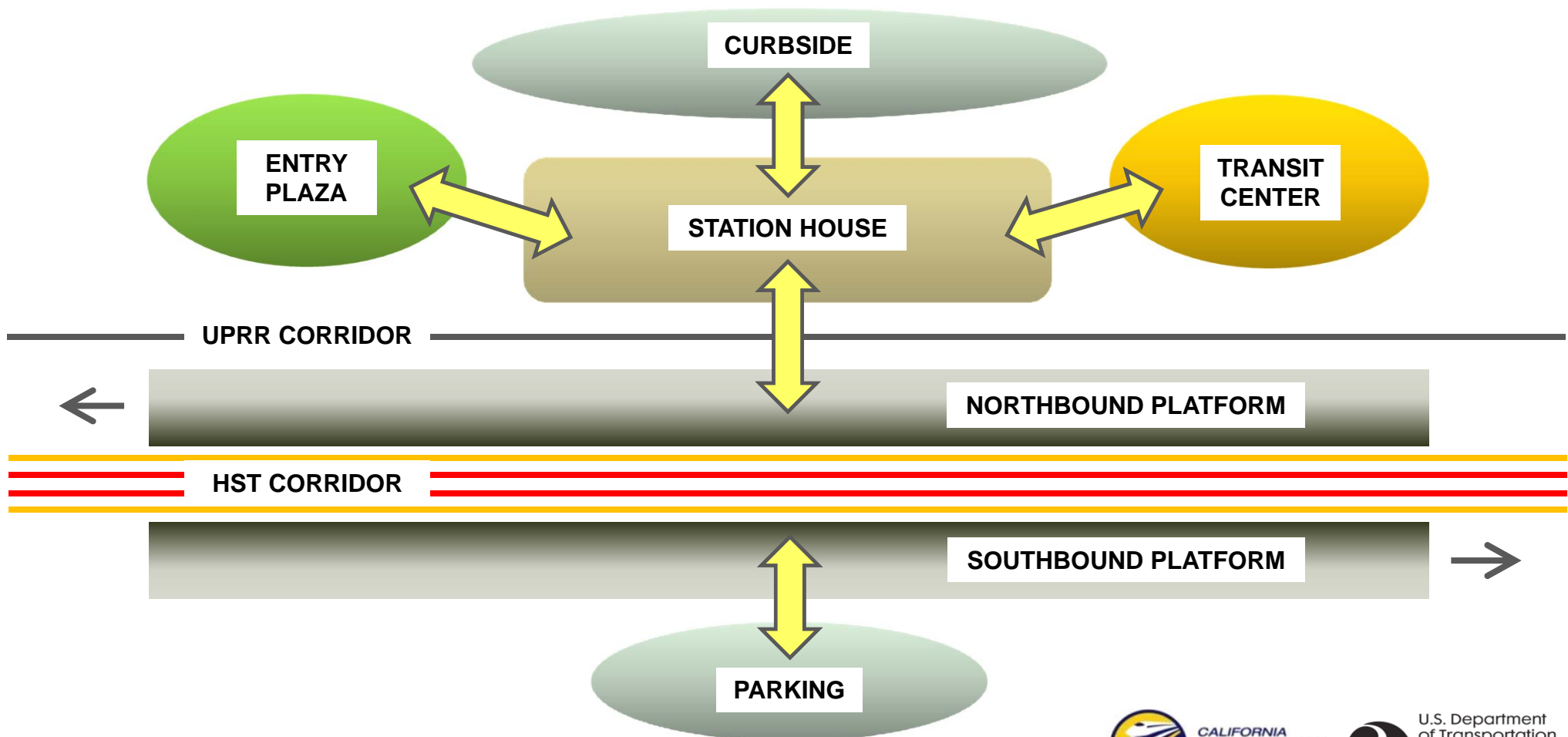
## Typical Elements of a Side Platform HST Station



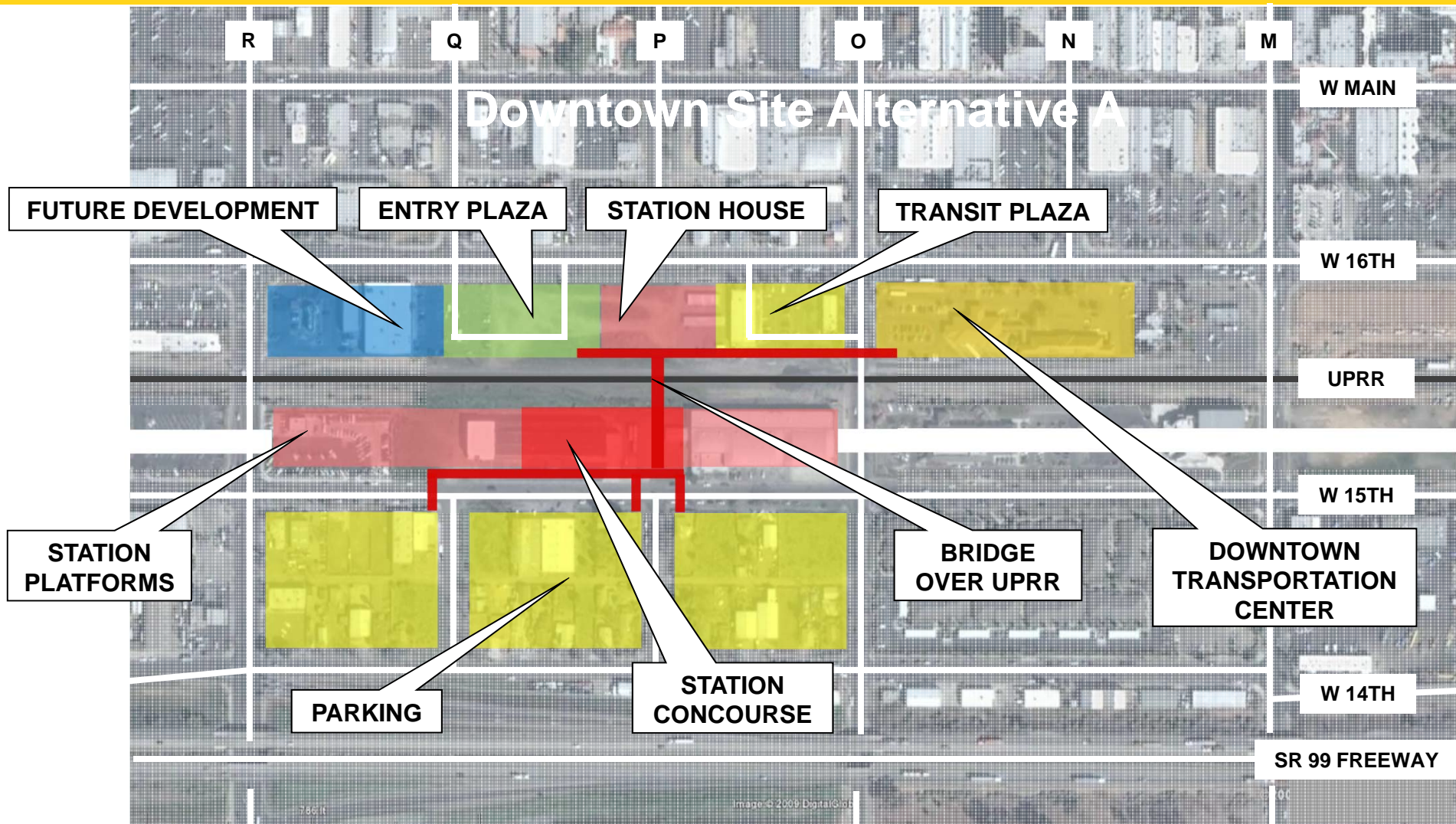


# Merced Station Design Concepts

## Site Planning Diagram



# Merced Station Design Concepts



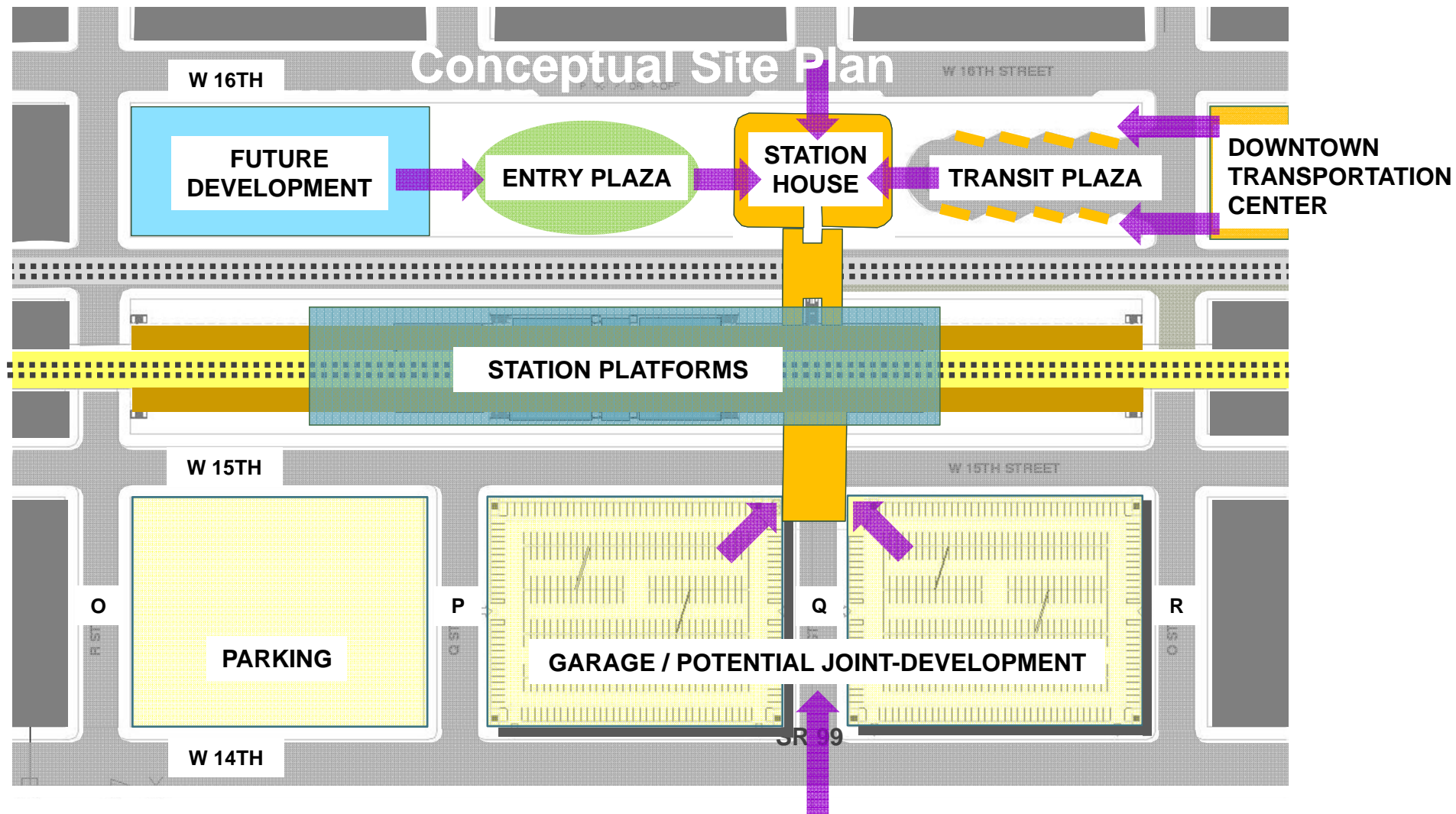
CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY



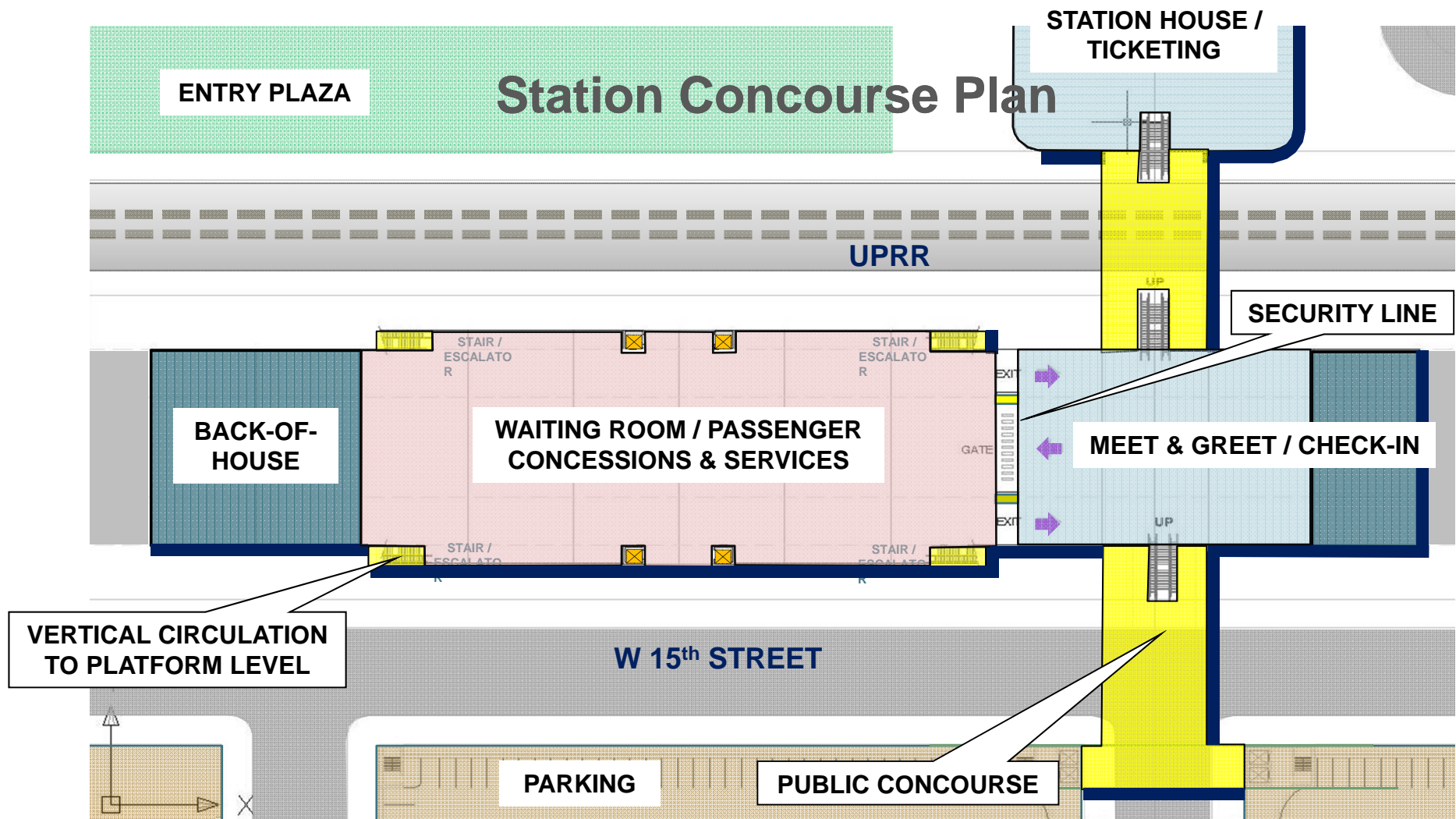
U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



# Merced Station Design Concepts



# Merced Station Design Concepts



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY

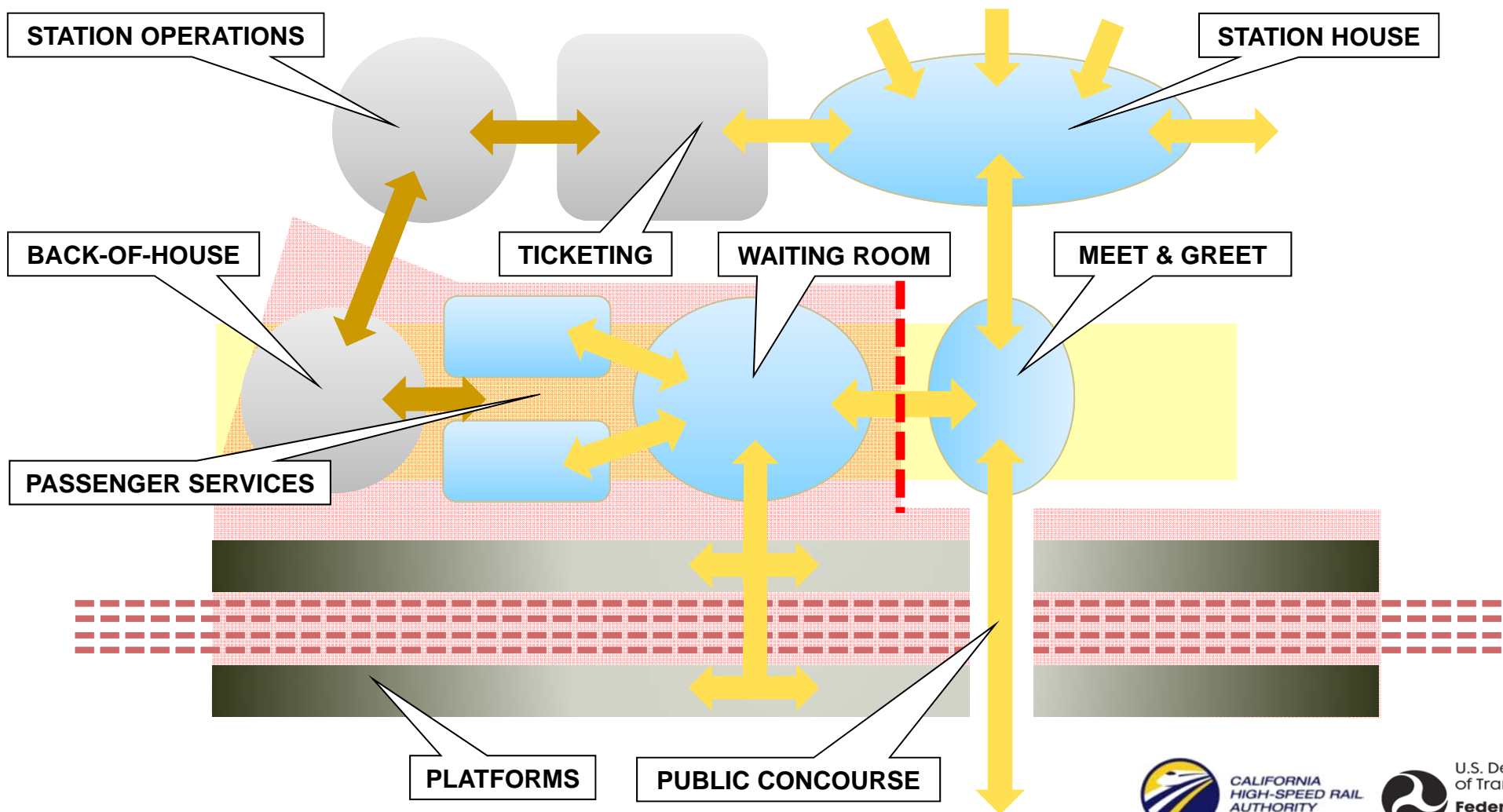


U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



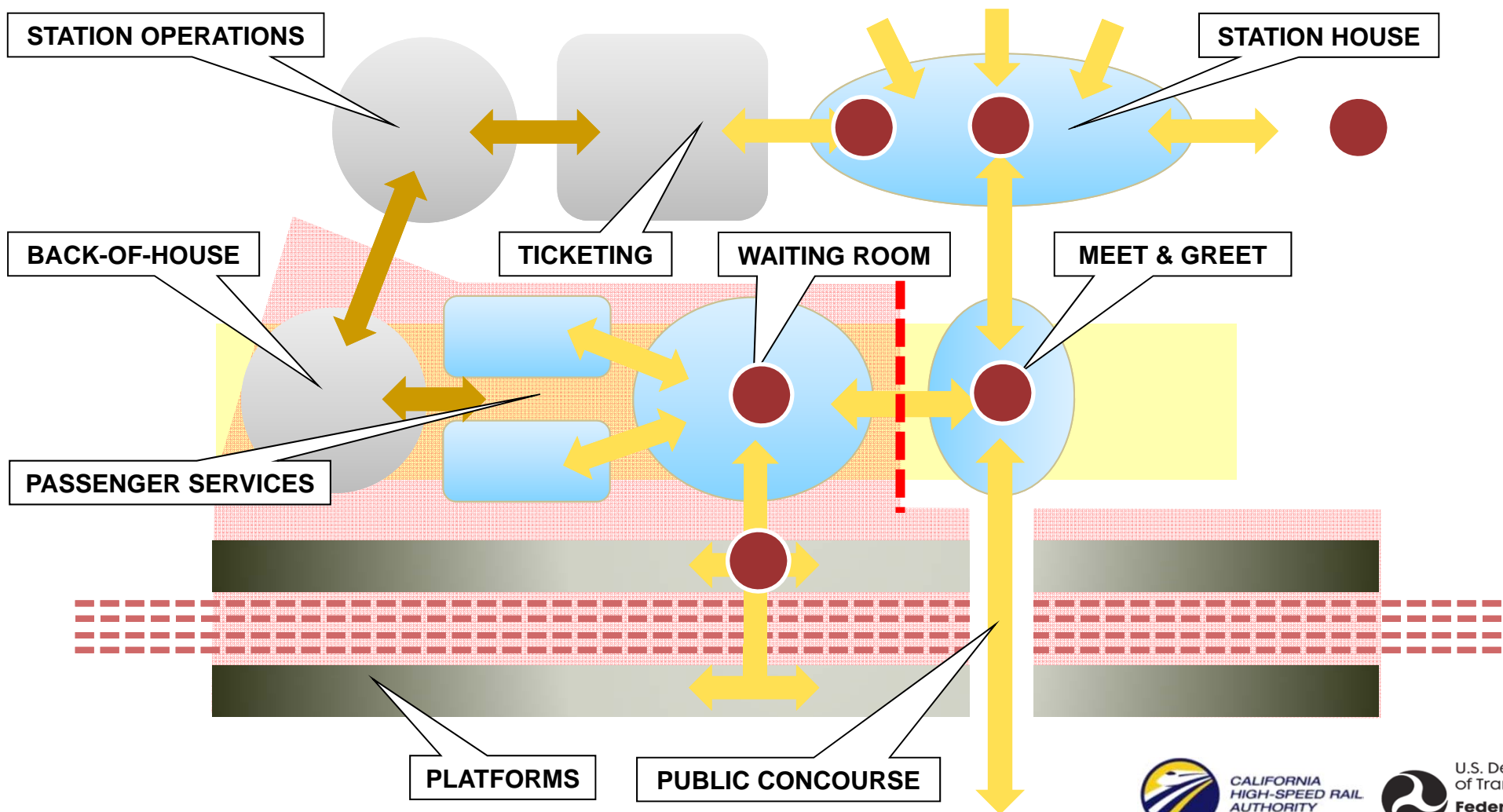
# Merced Station Design Concepts

## Functional Relationships Diagram



# Merced Station Design Concepts

## Functional Relationships Diagram



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY

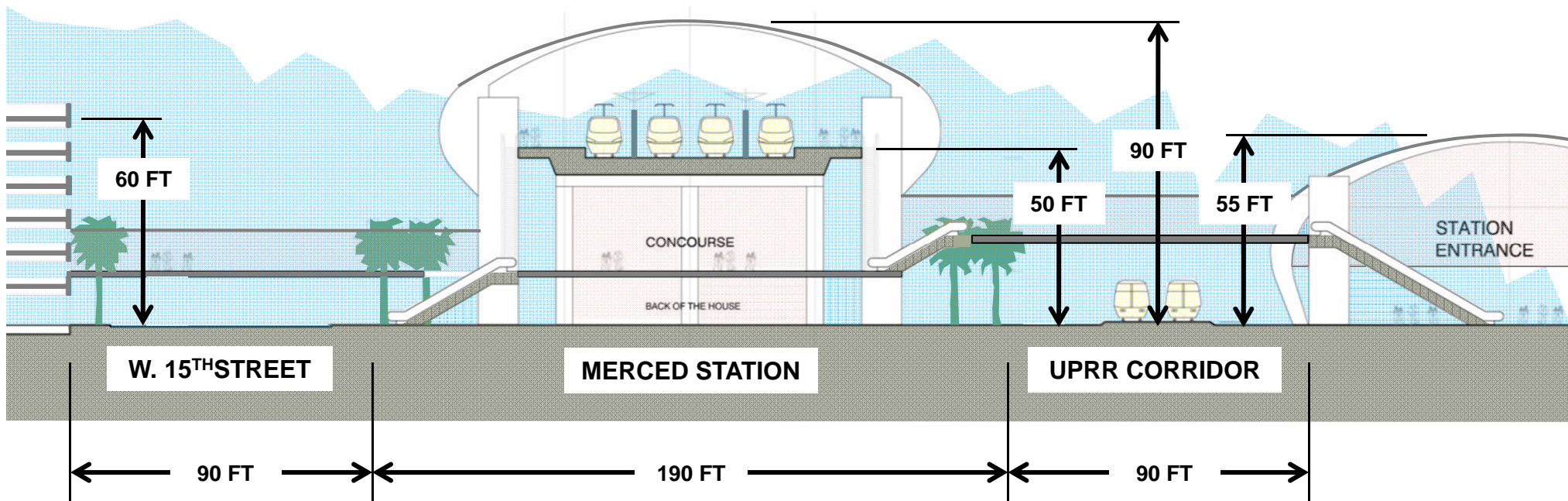


U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



# Merced Station Design Concepts

## Station Cross-Section



# Merced Station Design Concepts

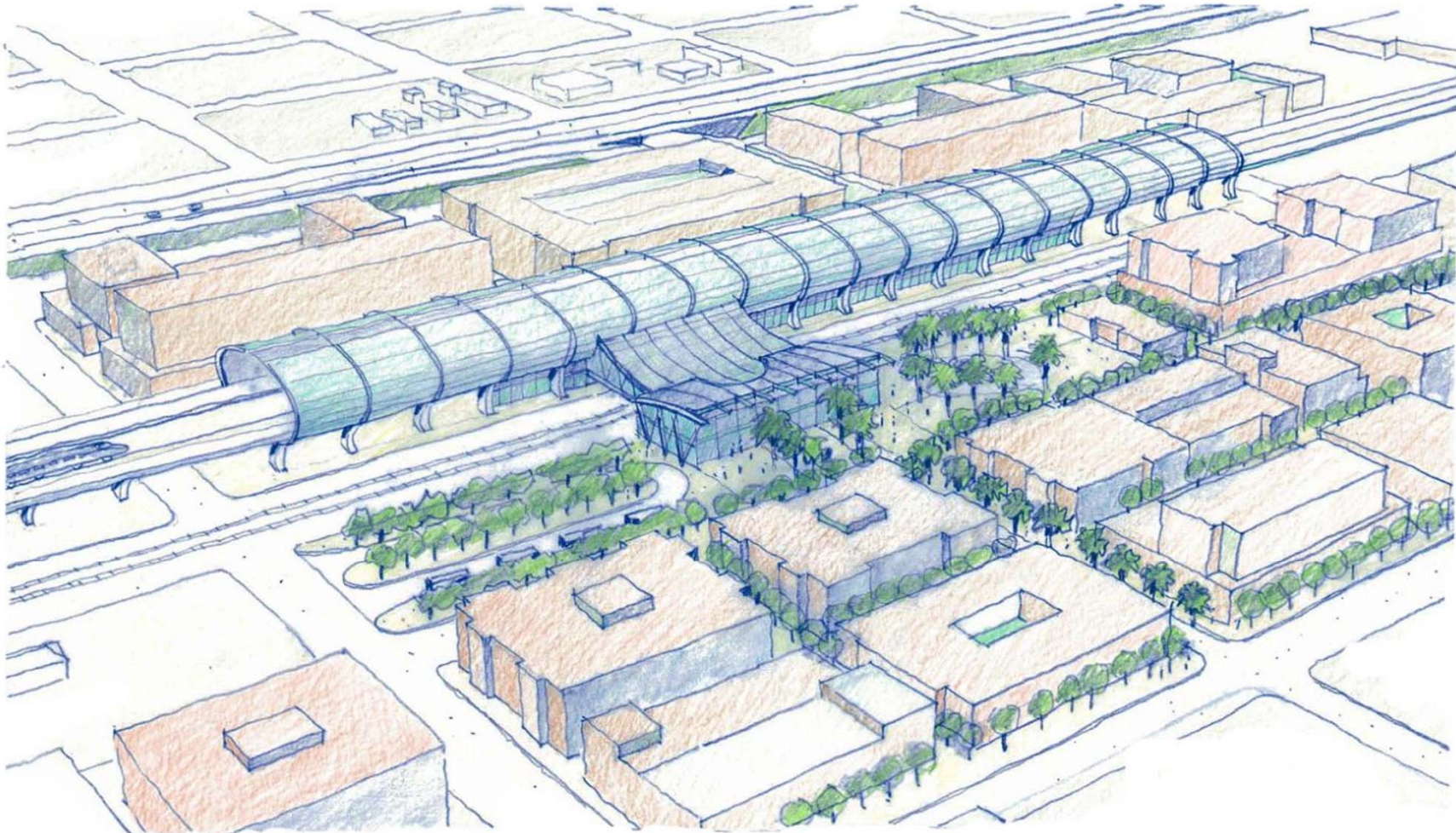
## Architecture and Urban Design





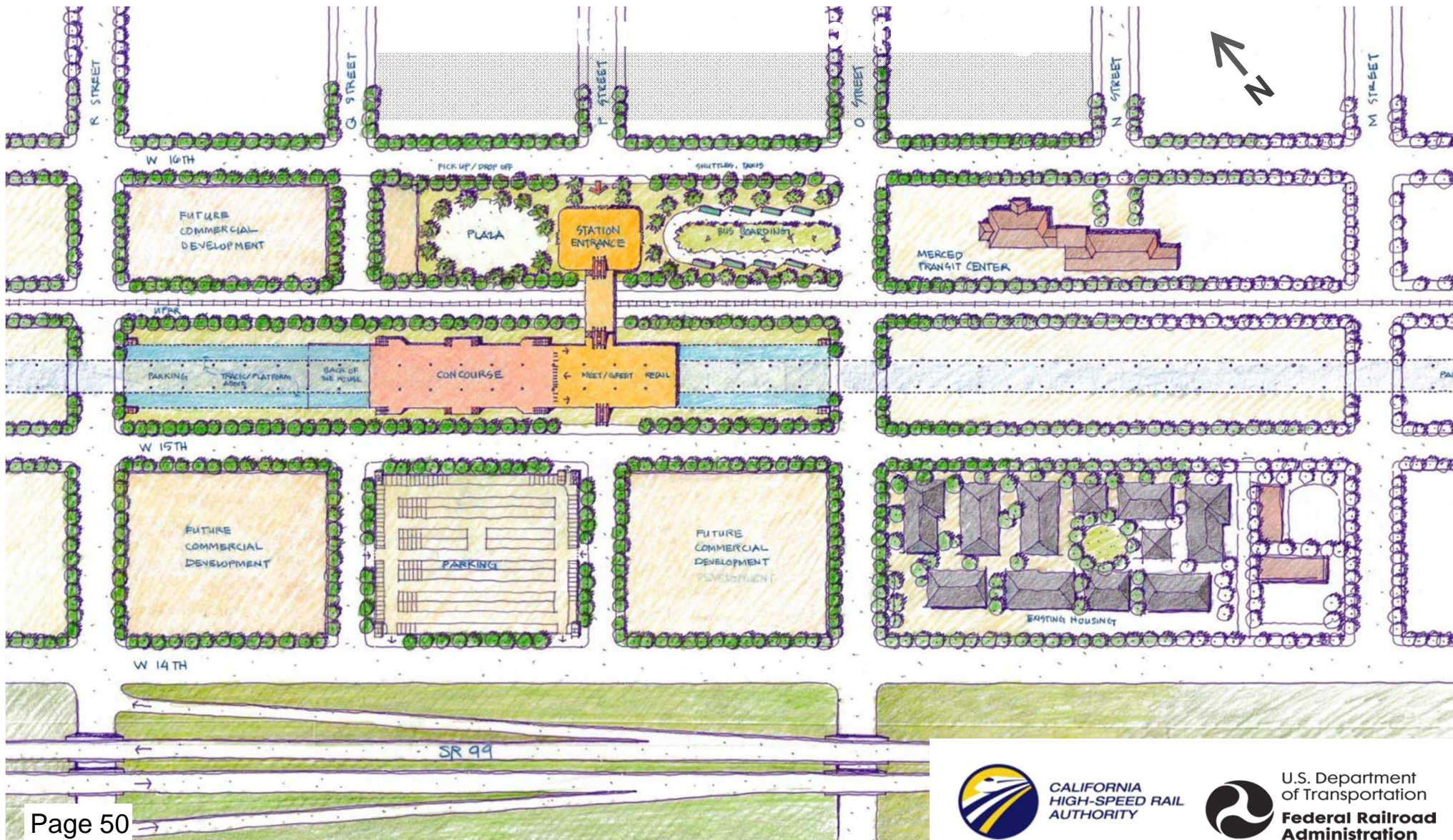
# Merced Station Design Concepts

## Architecture and Urban Design





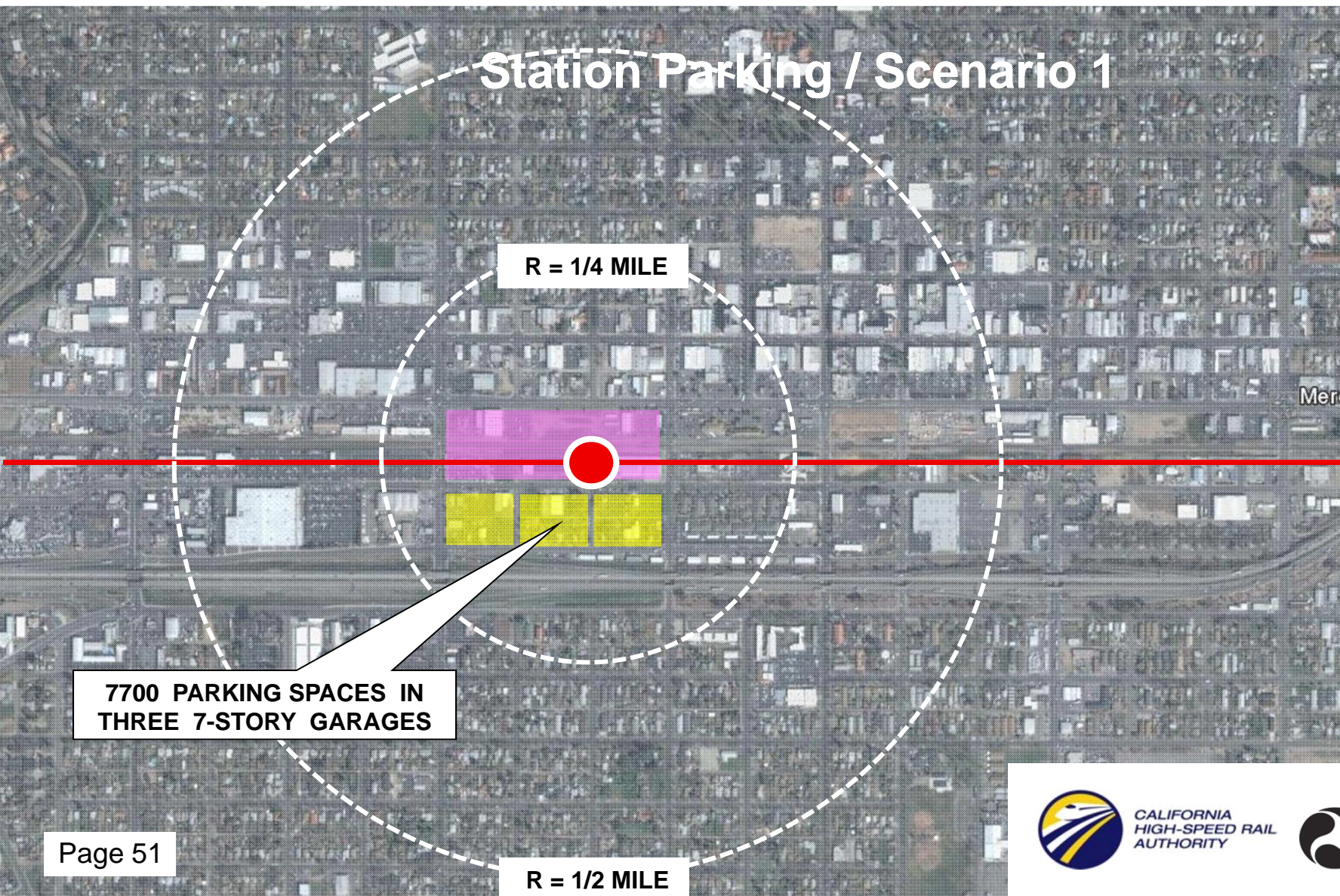
# Merced Station Design Concepts





# Merced Station Design Concepts

V U T S R Q P O N M Canal K MLK I H G



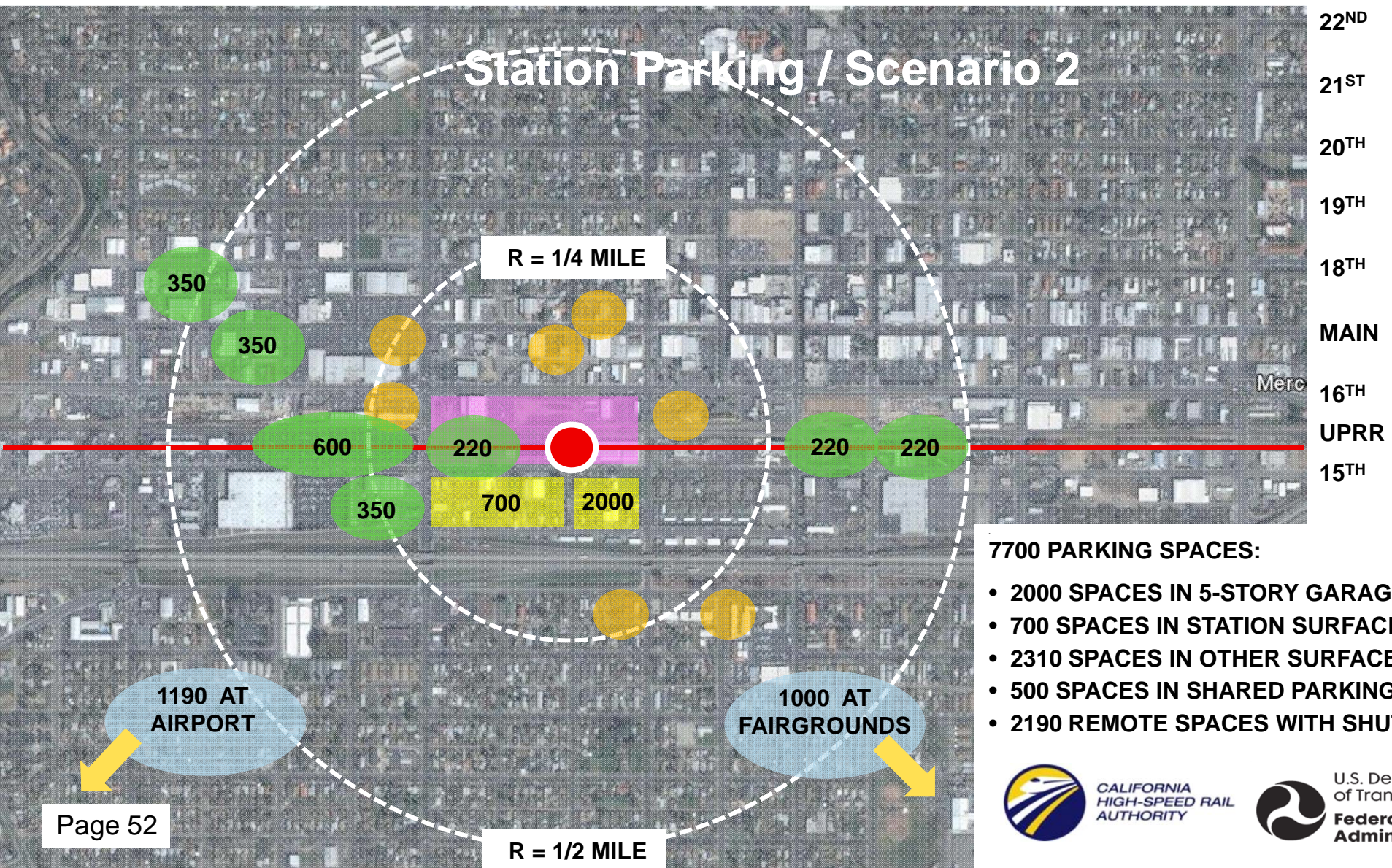
22<sup>ND</sup>  
21<sup>ST</sup>  
20<sup>TH</sup>  
19<sup>TH</sup>  
18<sup>TH</sup>  
MAIN  
16<sup>TH</sup>  
UPRR  
15<sup>TH</sup>  
14<sup>TH</sup>  
SR 99  
13<sup>TH</sup>  
12<sup>TH</sup>  
11<sup>TH</sup>





# Merced Station Design Concepts

V U T S R Q P O N M Canal K MLK I H G



CALIFORNIA  
HIGH-SPEED RAIL  
AUTHORITY



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



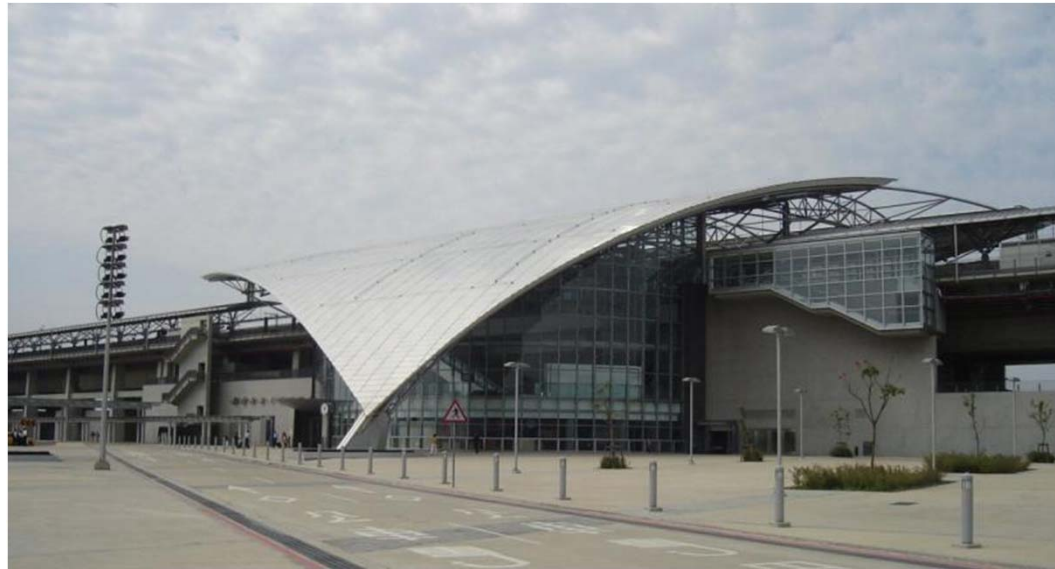
# Agenda

1. Introduction - High Speed Train in Merced
2. Station Area TOD Opportunities
3. Conceptual Station Area TOD Design
4. Merced Station Design Concepts
- 5. High Speed Train Station Examples**
6. Discussion and Comments

# HST Station Examples



Station Entrance



Taiwan High Speed Rail Station





# HST Station Examples

## Station Platform



Beijing South Railway Station





# HST Station Examples



Trainsheds

St. Pancras  
Train Station



Waterloo Train Station





# HST Station Examples



Berlin Central Station

# HST Station Examples



Ticket Machine and Fare Gates





# HST Station Examples

## Express Train Separation



# HST Station Examples

Commercial Activities



Berlin Savignyplatz Railway Station



Under the Trackway





# Agenda

1. Introduction - High Speed Train in Merced
2. Station Area TOD Opportunities
3. Conceptual Station Area TOD Design
4. Merced Station Design Concepts
5. High Speed Train Station Examples
- 6. Discussion and Comments**

